

EQUIPMENT PREVIEW

of CHEMICAL PROCESS INDUSTRIES

Volume 2

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Member C. C. A.

Number 6

The Editors' Spotlight

—interesting items selected by The Editors in preparing this issue.

1. **Optical Pyrometer**—First optical pyrometer to use potentiometer method. For use in production of metals, ceramics, glass, etc. See item EP 901, page 3.
2. **Self-Priming Pump**—No packing gland or mechanical seal. Centrifugal type. Designed for use in chemical plants, for corrosive liquids. See item EP 935, page 8.
3. **Electric Hand Lift Truck**—Uses electric power for hauling, hydromatic lift and lowering by hand, increasing handling capacity at low cost. See item EP 1029, page 21.
4. **Selenium Rectifier**—Used for wide range of industrial direct current requirements. Blowers and cooling equipment not necessary. Uses Selenium plates operating on principle similar to other dry plate type rectifiers. See item EP 961, page 12.
5. **Dust Hood**—New design gives more positive, effective control in collecting types of operations. See item EP 947, page 10.
6. **Surface Temperature Pyrometer**—For precise readings of all surface temperatures with interchangeable thermocouples . . . molds, molten metals, rubber, plastic and wax surfaces, etc. See item EP 909, page 4.
7. **Microprojector**—To determine particle size distribution and number concentration of impinger dust samples . . . rapid counting with less eye strain. See item EP 899, page 3.
8. **Moisture Detectors**—For testing wood, plaster and other surfaces and determining moisture in many products, e.g. quinine sulphate, in clay products from dryers, etc. See item EP 928, page 7.
9. **"Stay Tube" in Unit Heater**—Drains entrained corrosive moisture directly from supply header to return header and so prolongs life of unit heater. See item EP 1031, page 21.
10. **Thermostatic Filler**—Fills barrels, drums, etc., handling wide range of liquids. Automatically corrects volume for changes in temperature for any coefficient of expansion. See item EP 1044, page 23.
11. **Flow Rate Indicator**—Differential pressures—no mercury. Calibrated bellows unit eliminates conventional mercury column, thus avoiding fluid contamination. See item EP 920, page 6.

See complete Directory of Products page 2.

MAN... Without Equipment and with it



ONCE in a blue moon we read of some hardy soul who disdains the advantages of civilization's "tools." Equipped with only a hunting knife, he plunges into the virgin forest to lick nature "barehanded."

What does he prove? That stripped of equipment, man is little better than a savage.

Early man, so anthropologists tell us, sharpened a stick as his first "tool" . . . thus beginning his long trek to civilization. Later he developed the wheel, a giant step forward.

And so, from the dawn of history, man has progressed through equipment . . . tilling the soil, fabricating clothing, providing luxuries. Finally the capital equipment of industry.

A moral? No. But a forceful reminder of the vital part that equipment plays in our lives, in our industries.

An industrial plant which fails to keep abreast in its equipment has already begun to fail. It cannot long compete with those that augment strength of arm and skill of brain with better equipment.

You men who operate chemical industries plants have an unexcelled opportunity in the Chemical Industries Exposition (New York, Dec. 4-9) . . . to "see and feel" the latest in equipment for your special uses.

And throughout the year EQUIPMENT PREVIEW keeps you abreast. For this publication's service is unique . . . it devotes itself solely to bringing you the complete, comprehensive story of equipment developments that are of prime interest to you in your specialized work.

(To secure EQUIPMENT PREVIEW for your key men, turn to "request slip" . . . pages 12 and 13.)

Russell L. Putman
Publisher



Exposition of Chemical Industries — New York

17th Exposition of Chemical Industries

"The Greatest Show On Earth"

For chemical process men, this is in truth "The Greatest Show on Earth."

For here under one roof you find the greatest showing of new developments in process equipment. To see so much in any other way would require weeks, if not months, of time and travel.

Moreover, here every exhibitor is ready and eager to demonstrate his equipment to you, to answer your questions and to discuss your problems in relation to best equipment applications.

The Editors of EQUIPMENT PREVIEW urge you to take full advantage of this opportunity.

And through the coming year look for each issue of EQUIPMENT PREVIEW . . . keep "up-to-date" by making full use of its unique service in reporting the latest in equipment developments.

If you are not now receiving EQUIPMENT PREVIEW regularly, see "request slip" . . . pages 12-13, this issue.

PASS ON TO NAME CHECKED

When you have read this issue, remember your associates who would like to see it.

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New DEVELOPMENTS

New PROCESSES
New APPLICATIONS



PREVIEW OF PROGRESS

See with your own eyes the newest equipment, materials and products for the chemical and process industries. See the exhibits of more than three hundred progressive manufacturers—talk to their engineers—witness demonstrations—ask questions—discuss problems—get valuable data and ideas—make comparisons—weigh facts—apply what you learn. Nowhere else and at no other time can you see so much of value to you and your business. Be sure to visit the

17th EXPOSITION OF CHEMICAL INDUSTRIES

Grand Central Palace, New York Dec. 4-9, 1939
Management, International Exposition Co.

125

When inquiring specify EP894 ... see information request blank, pgs. 12-13

The OLIVITE Pump



handles acids and other solutions without leakage, breakage, or corrosion.

The Olivite Pump avoids the pitfalls usually encountered in acid-handling. The cast-iron impeller, casing and cover are in themselves strong. The chemically resistant OLIVITE is firmly bonded to this metal. It will not slough off or check even when handling hot solutions. The pump is for all practical purposes unbreakable. As for leaking, the floating stuffing box and spring-tensioned gland take care of that. The packing stays in place. Bulletin 302 gives full details about the three sizes. Send for a copy.

OLIVER UNITED FILTERS, INC.

Dept. O 33 West 42nd St., New York, N. Y.

When inquiring specify EP895 ... see information request blank, pgs. 12-13

DIRECTORY ...

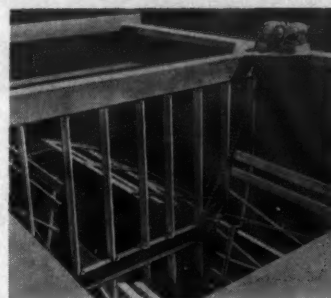
... of products in this issue

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Multi-Stage Slo-Mixing

Improved Mixing—Saves Chemicals



Uses — Equipment incorporates Langelier process of multi-stage flocculation for mixing basins in sewage and water treatment plants. These Slo-Mixers may be installed in existing basins or a portion of existing sedimentation basins may be readily converted into slo-mixing basins.

Features—Operating experience and laboratory tests have shown chemical savings, improved mixing and greater over-all efficiency. The equipment obtains multi-stage slo-mixing by progressively decreasing either the paddle speed or paddle area or both. Paddles are installed with direction of rotation at right angles to liquid flow. This arrangement coupled with ingenious baffle arrangement assures positive mixing, elimination of short-circuiting and minimum power consumption.

Description—Several drive arrangements are available, allowing selection of best drive for each application. Variable speed unit providing a 3:1 range is usually incorporated in drive to provide flexibility and to allow operator to keep equipment in step with liquid flow and change in liquid analysis. For existing plants and new installations an arrangement may be worked out for Slo-Mixers alone or in combination with mechanical clarifiers in sedimentation basins.

CHAIN BELT CO., Dept. EP, Milwaukee, Wis.

When inquiring specify EP896 ... see information request blank, pgs. 12-13

Data Folder on Mixing Operations

This six-page, illustrated folder gives performance data in detail on its line of air-motored agitators in laboratories and industrial applications. Available on request. ECLIPSE AIR BRUSH CO., Dept. EP, 390 Park Avenue, Newark, New Jersey.

When inquiring specify EP897 ... see information request blank, pgs. 12-13

Fireproof Blanket

Used in Few Seconds Without Help



Uses—For laboratory or plant workers operating under fire hazard conditions. Can also be used to throw over and snuff out small fires.

Features — Can be wrapped tightly around one's body in few seconds without assistance. Ever-ready for instant use. Takes up small space. Easily replaced on vertical roller.

Description—Blanket is made of fireproofed and moth-proofed wool. Being 80 inches long, it is large enough to cover large man completely. Blanket is wound on vertical roller, which is mounted on wall or post. In operation, should worker's clothes catch

fire, he thrusts arm through catch-rope attached to exposed edge of blanket and, turning rapidly, wraps blanket around him, thus extinguishing clothing flames and receiving protection from burns.

DAVIS EMERGENCY EQUIPMENT CO., Dept. EP, 55 Van Dam St., New York, N. Y.

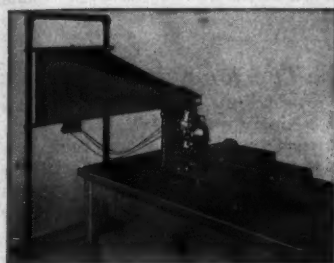
When inquiring specify EP898 ... see information request blank, pgs. 12-13

INSTRUMENTS OF CONTROL

New developments in control instruments
for Production . . . for Laboratory

MICROPROJECTOR

Rapid Counting With Less Eyestrain



Uses — For use in determining particle size distribution and number concentration of impinger dust samples. For checking performance of dust collectors, ventilating systems, etc. in such plants as the following where dust creating operations include the manufacture of

acids, dyes, asphalt, iron and steel castings, cement, chemicals, clay products, explosives, gypsum, paint and varnish, plastics, rock products, rubber, smelted metals, etc.

Features—Samples are counted rapidly with little eyestrain; concentrated samples are counted without dilution; dust particles are easily distinguished from pits, bubbles, etc., and particle size estimation is accurate.

Description—This new instrument projects an image of a microscope's field upon a ruled, vertical, translucent screen, providing a magnification of 1000 diameters for counting and 10,000 diameters for particle size determination. The units consist of an automatic feed carbon arc-lamp, the light from which is reflected by the microscope's mirror up through the field to a right angle projection prism fitted above the eyepiece. A large leatherette bellows is provided between the prism and the ruled screen, which is 50 millimeters square. Remote controls enable observer at the screen to focus the microscope and operate the mechanical stage.

MINE SAFETY APPLIANCES CO., Dept. EP, Braddock & Meade Sts., Pittsburgh, Pa.

When inquiring specify EP869 . . . see information request blank, pgs. 12-13

SOLU-BRIDGE

Direct Reading in Percent of Sodium Hydroxide



Uses — Primarily designed to determine concentration of alkali washing solutions of the type generally used in the dairy, brewing and soft drink industries, as well as in the field of metal products when surfaces must be cleansed. Similar bridges are available with

suitable direct calibration for other applications such as testing of distilled water, concentration of boiler water and steam condensate, conductimetric titrations, concentration of brines, determination of ash content of sugar, and concentration of solutions of all types.

Features—Panel scale is calibrated in percentage of sodium hydroxide so that measurements are directly and easily obtained without necessity of referring to complicated graphs and charts. Scale is calibrated from .01% to 7%, with an additional scale to allow for temperature correction from 64 deg. F. to 190 deg. F. Maximum error

is less than 3/10 of 1% of sodium hydroxide at upper end of scale.

Description—Instrument is self-contained in shell metal case. Operates from 110 volt, 60 cycle A.C. line, and requires no batteries or other accessories. Because of internal bridge construction all measurements obtained are independent of variations in line voltage and frequency, and characteristics of tubes used. Container measures 6 3/4 x 5 x 2 3/4 inches. Instrument is supplied with 5 ft. power cord line, and with all tubes, ready for operation. Net weight 3 1/4 lbs.

INDUSTRIAL INSTRUMENTS CO., Dept. EP, 156 Culver Ave., Jersey City, N. J.

When inquiring specify EP900 . . . see information request blank, pgs. 12-13

OPTICAL PYROMETER

Uses Potentiometer Method—Direct Reading



Uses — An entirely new temperature measuring instrument—the first industrial optical pyrometer to use the potentiometer method. Used in the production of metals, ceramics, glass, etc., as well as in the laboratory.

Features—Calibrated, not in milliamperes, but directly in temperature de-

grees, and measures temperatures with more convenience and greater accuracy. Ample accurate for laboratory use. Light in weight, it can be easily and rapidly operated, and even an inexperienced operator can take precision readings. Handy as field glasses, instrument can be sighted on any object that can be seen. Readings can readily be duplicated by different observers to within a few degrees. Portable—only two-thirds the weight of previous model. Telescope has right-side-up image making easy sighting.

Operation—To measure temperature of an incandescent object, operator looks at object through telescope which contains a glowing filament. He sees filament either lighter or darker than its background. While he watches, he adjusts filament current, and consequently brightness, by turning a knob until filament disappears—matches and merges with object. Thus he adjusts filament brightness to equal that of object. Slight turn of second knob balances potentiometer which is used to measure filament current, and which is calibrated directly in temperature degrees.

Description—Standard ranges are from 1400 to 5200 deg. F. (775 to 2800 deg. C.) Housed in light-weight alloy castings. Interiors of both telescope and potentiometer are spark-proof and dust-tight. Front lens set in deep recess for protection. Flexible eyeshield fits face and spreads to admit spectacles; doesn't get hot. Holder on side of instrument for telescope leaves operator's hands free to make notations. Unit hangs on straps which cross shoulders and back. No trouble from loose or corroded contacts on connecting table—telescope and potentiometer are permanently connected. Four battery cells are easily accessible in separate rear compartment. Catalog N-33D available upon request.

LEEDS & NORTHRUP CO., Dept. EP, 4934 Stenton Ave., Philadelphia, Pa.

When inquiring specify EP901 . . . see information request blank, pgs. 12-13

MERIAM INSTRUMENTS for Better Flow Measurements

An assembly of the units shown will accurately measure the rate of flow of any gas or liquid on pressures up to 250 lbs.



ORIFICE PLATE and FLANGES

The thin plate orifice which is inserted between the flanges in the pipe line is correctly engineered for your particular flow conditions. The differential pressures which the orifice creates are piped to the meter from the two outlet connections in the flanges.



TYPE "H" FLOW METER

The differential pressures actuate the mercury column of the meter so that it indicates on the scale the rate of flow in the pipe. Scales are available which will read direct in any flow units desired. Write for Bulletin No. 18 containing complete information on these accurate, durable and inexpensive instruments.



THE MERIAM Co.
Instruments for Indicating Pressure or Flow
of Liquids and Gases
CLEVELAND • OHIO

When inquiring specify EP902 . . . see information request blank, pgs. 12-13

THE SHADOWGRAPH--



**Industry's
Newest Precision
Scale . . .**

Friction is the major enemy of the Scale Engineer. When EXACT WEIGHT Engineers created the SHADOWGRAPH they eliminated all mechanical

indication . . . replaced it with an electric light ray intercepted by a fine needle or wire. This eliminates a friction point effectively, simplifies construction and increases scale efficiency materially.

Write for new literature covering all points of this revolutionary new principle. Do it today.

THE EXACT WEIGHT SCALE CO.
31 W. Fifth Ave. Columbus, Ohio

When inquiring specify EP903 . . . see information request blank, pgs. 12-13

Here's **ONE** meter
that does the work of **SIX**

and saves
thousands
of dollars
each year!

Whatever your metering problem, there's a National Meter to meet it effectively and economically . . . and so efficiently that the savings effected often exceed the small investment the first few months . . . and then pay a generous dividend throughout years of service. • If you are interested in preventing waste, in controlling costs, in protecting profits . . . if you are interested in useful, factual information on the advantages, application, selection, and installation of meters, then send for this new complete and comprehensive catalog.

National Meter Company

4205 First Avenue, Brooklyn, New York

Boston • Chicago • Dallas • Los Angeles • San Francisco

When inquiring specify EP904 . . . see information request blank, pgs. 12-13



Speed Ranges
Up to 12 to 1
1 to 15 H.P.

Adjustable Speeds Direct from A-c. Supply

This new Reliance all-electric a-c. adjustable-speed drive employs a proven principle of speed control heretofore confined to large units . . . A compact control unit (see cut) connected to the a-c. power circuit can be placed anywhere . . . An adjustable-speed motor applied directly to the machine saves space, simplifies driving parts and provides speed ranges as great as 12 to 1 . . . A push-button for starting and stopping and the speed adjuster can be mounted within easy reach. Sizes 1 to 15 hp. for 3-phase circuits . . . Produced by men who have specialized in adjustable-speed motor-drives for 34 years . . . Get Bulletin 307 for details.

Reliance Electric & Engineering Co.

2092 Ivanhoe Road

Cleveland, Ohio

Sales Offices in Principal Cities



When inquiring specify EP805 . . . see information request blank, pgs. 12-13

Control Instruments (Con.)

Automatic Storage Control

Dust-Tight, Explosion-Proof, No Wearing Parts

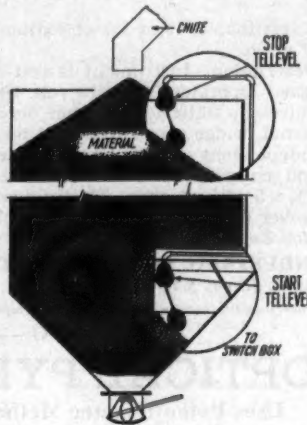
Uses—For starting and stopping conveyors feeding bulk materials to bins or hoppers, and for opening and closing valves feeding liquids into tanks.

Features—Operation is normally automatic, but simple wiring change permits unit to keep flow of material stopped or continuous until control switch is thrown. Dust-tight, explosion-proof, and has no wearing parts to get out of order. Inexpensive.

Description—The "Tel-level" consists of a multiple electrode sealed mercury switch so mounted that tipping it in any direction will break the electric current. A polished aluminum bell provides the dust-tight housing for the switch and electric wiring. Mounting for the mercury switch is a fiber holder, screwed to top of tipping rod. Rod is pivoted in a rubber diaphragm, its lower end fitting into the globular polished aluminum bell. Bell housing is supported on the end of a ½" conduit pipe. Bulletin 1239 gives details.

STEPHENS-ADAMSON MFG. CO., Dept. EP, 11 Ridgeway, Aurora, Illinois.

When inquiring specify EP906 . . . see information request blank, pgs. 12-13



Repeat Cycle Timer Has Eight Different Time Scales

Uses—Designed for use on A.C. circuits to (1) continuously close and open a single circuit at any pre-set operating interval, and (2) to alternately close and open two circuits at any pre-set operating interval. Typical uses are: automatically alternate operation of two pumps in dual pumping installation, uniformly reverse gas flow in open hearth furnaces, periodically start and control during duration of operation of electrically operated machinery such as sludge pumps, etc.

Features—Has wide variety of time ranges—eight different time scales ranging from one revolution in 60 seconds to one revolution in 24 hours. Has number of operations—each dial being equipped with four operating arms (2 "on" and 2 "off") so that either one of two cycles of operation can be obtained in one dial revolution. Either operation cycle can be timed independently. Timing motor will start on a plus or minus 20% of rated voltage. Has sealed in lubricant. Extra torque. Switch mechanism



ism has definite snap action and has positive lock in both operating positions.

Description—Synchronous motor, 2.8 watt slow speed, self-starting, unidirectional type with enclosed gear train operating in oil. Switch unit is quick-make quick-break, self-locking type with silver butt-to-butt contacts amply rated to carry ½ H.P. motor load, a 1200 watt heater load or a 1000 watt lamp load. Die cast housing for surface mounting is moisture and dustproof. Has glass window for inspection, hasp for padlocking and four knockouts for either ½" or ¾" conduit connection, with ample room provided for wiring.

R. W. CRAMER CO., INC., Dept. EP, Centerbrook, Conn.
When inquiring specify EP907 . . . see information request blank, pgs. 12-13

Dial Type Thermometers

Bulletin 148-5, 24 pages, contains complete descriptions and explanations of the company's line of indicating thermometers. One section describes each of the four dial-type indicating thermometers: vapor pressure, gas pressure, water pressure with fully compensated case and tubing, and water pressure compensated for temperature changes that are the same around both case and tubing. Other sections explain the ball and trough movement; specimen scales for each class of instrument; bulbs for particular installations, etc.

THE FOXBORO COMPANY, Dept. EP, Foxboro, Mass.
When inquiring specify EP908 . . . see information request blank, pgs. 12-13

Surface Temperature Pyrometer

Light Weight—Interchangeable Thermocouple

Uses—For precise readings of all surface temperatures with interchangeable thermocouples to read surface temperatures of such things as molds, platens, bearings, calendar rolls, drying rolls, pipes, molten metals, oven type furnaces; rubber, plastic and wax surfaces, etc.

Features—Light weight, yet rugged. Has swivel fan shaped dial, and flexible adjustable thermocouple joint. Interchangeable thermocouples for any surface. Handle may be screwed in either bottom or back of instrument. Can be used on flat or curved surfaces, stationary or moving. Has automatic cold junction compensation, hand wound coil and genuine sapphire jewels for accuracy.

Description—Four models are available in the 2850 series, and four models of thermocouples for various surfaces and uses (lava, bow, general purpose and needle types) are available. Model 2850, for example, has dial-shape instrument with 2½" pyrometer scale length. Armored flexible lead to plug-in socket.

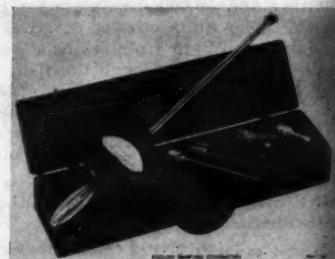
WHEELCO INSTRUMENTS CO., Dept. EP, 1929 South Halsted St., Chicago, Ill.

When inquiring specify EP909 . . . see information request blank, pgs. 12-13

Boiler Room Instruments

Booklet 29-31 has for its purpose providing data from which a suitable plan of instrument equipment, covering most operating needs, may be worked out for a steam plant. Material included gives descriptions and illustrations of steam generation and distribution applications for measuring temperature, pressure, flow, liquid level and %CO₂. Tables for feedwater temperature, saturated steam flow, and %CO₂ point out fuel saving possibilities. **BROWN INSTRUMENT CO., Dept. EP, Wayne & Roberts Ave., Philadelphia, Pa.**

When inquiring specify EP910 . . . see information request blank, pgs. 12-13



Electro-Chemograph

Uses Dropping-Mercury Electrode Principle



Uses—For quantitative and qualitative analysis by determination of current / potential relations. Maker states that for the present, research laboratories establishing routine procedures will probably be the principal users. However, the

method has other possibilities and results have been obtained in various fields of chemistry (inorganic, organic, biological and physical) for industrial analyses of water, explosives, gas, mineral, metallurgical, soap, sugar, fermented liquors, textile dyes and bleaches, and petroleum. It should be noted about these applications that the apparatus itself is well worked out and standardized, but the underlying method is still in the stage where for many of these applications only the basic principles are established.

Features—Automatically inks curves from which quantitative and qualitative analyses can be determined. Makes possible quick and convenient analyses in those processes where its possibilities have been determined; eliminates dark rooms, developing processes and delicate galvanometer systems. Drawn in sight of the operator, the curve is inked on a wide, easily-read permanent chart. Instruments are made up of standard mechanisms made by the company and which have been used reliably for other applications.

Operating Principle—This method of analysis is comparable to the optical spectrographic method in both sensitivity and reproducibility, but, in many cases, is much faster. In all cases the required apparatus is much less expensive and operating costs should be less. Function of the dropping-mercury electrode is to provide a continuously renewed electrode of such small area that it becomes polarized rapidly. The polarizing cell is used by applying between its two electrodes a unidirectional polarizing potential which is increased at a uniform rate. A graph may be obtained giving the relation between the current and the applied polarizing potential. This relation will be approximately a linear one as long as there is no interference with the counter emf of the polarized, dropping-mercury electrode. Technical Bulletin E-94(1) is available upon request.

LEEDS & NORTHRUP CO., Dept. EP, 4934 Stenton Ave., Philadelphia, Pa.

When inquiring specify EP911 ... see information request blank, pgs. 12-13

Coordinated Process Control System

How to analyze a situation in which a uniform, high-quality product is desired at lower production costs is outlined in a new booklet—No. 512. Object of booklet is to call attention to plant executives to certain facts regarding modern process-control technique which, the company states, is setting new standards for cost and product uniformity.

THE BRISTOL COMPANY, Dept. EP, Waterbury, Conn.

When inquiring specify EP912 ... see information request blank, pgs. 12-13

Pyrometer and Resistance Thermometers

New developments featured in this 32-page, well-bound catalog are a self-balancing indicating controller, a self-balancing indicator controller with "in-balance" signal, recorder-controller for throttling fuel heat and another for electric heat, a two-point indicating controller, a cabinet type indicator and a multiple point (up to 6) indicating controller. Catalog No. 1101E is available upon request. **C. J. TAGLIABUE MFG. CO., Dept. EP, Park & Nostrand Aves., Brooklyn, N. Y.**

When inquiring specify EP913 ... see information request blank, pgs. 12-13

Have You A New Product?

If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in chemical and process manufacturing ... send it to our Editors.

Through **EQUIPMENT PREVIEW'S** editorial pages they will introduce it to this great field ... with more than 22,000 copies of this publication covering every plant.

This service costs you nothing, and there is no obligation. Just write—

The Editors, EQUIPMENT PREVIEW

737 N. Michigan Avenue

Chicago

Illinois

Gum Stability Bomb

A.S.T.M. Test Method for Gasoline



Uses—This bomb is used in connection with the latest A.S.T.M. method for gum stability of gasoline, D525-39T. It is an accelerated oxidation test of gasoline, by means of which the induction period is determined. The induction period may be used as an indication of gum stability, i.e. the tendency of gasoline to form gum during the storage period.

Description—The method involves the use of a recording type pressure gauge. The so-called "break" point of gasoline is defined in the method as that point provided by a pressure drop of exactly 2 lbs. in 15 min. and succeeded by a drop of

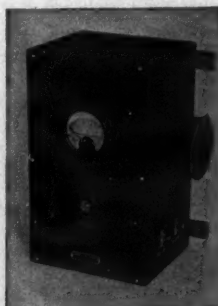
not less than 2 lbs. in 15 min. The number of minutes from the time the bomb is placed in the bath held at a specified temperature to the "break" point is recorded as the induction period.

C. J. TAGLIABUE MFG. CO., Dept. EP, Park & Nostrand Aves., Brooklyn, N. Y.

When inquiring specify EP914 ... see information request blank, pgs. 12-13

Automatic Checker

For Distilled Water and Condensate



Uses—To determine purity of water, condensate or other electrolytes by checking conductivity.

Principle—The presence in distilled water of one part per million of chloride ion will increase its conductivity about 50%. Any increase in conductivity above normal results in the operation of an alarm signal, electric valve or any other desired control apparatus. The meter on instrument panel indicates conductivity continuously. For use with water stills, meter is calibrated in parts per million of chloride ion in pure distilled water.

Description—Instrument panel is fully A.C. operated with built-in voltage regulator to assure accurate calibration. Housed in steel cabinet, 7"x12"x6 1/4" deep. Installation can be made by plant electrician. Control cabinet, magnetic valve and warning bell operate from the 115 volt, 50-60 cycle line. Models available on other voltages and frequencies. Easily adapted to other control applications.

INDUSTRIAL INSTRUMENTS, INC., Dept. EP, 156 Culver Ave., Jersey City, N. J.

When inquiring specify EP915 ... see information request blank, pgs. 12-13

This strainer cleans itself

The ELLIOTT Self-Cleaning Strainer



Cleans water of dirt, sand, fibrous matter continuously, without attention. The self-cleaning function is particularly reliable, being provided by a slowly rotating element which passes over each straining section in turn, blanking it off and permitting back pressure to flush out all arrested foreign matter, which then passes out the drain at the bottom of the unit. The construction of the straining sections prevents matting of fibrous matter. Bearings are entirely immune to cutting or scoring by dirt or grit.

A sturdy, efficient unit, characteristically Elliott in its satisfactory operation. Full details in Bulletin A-9.

A-247

ELLIOTT COMPANY

Accessories Dept., Peterson St., Jeannette, Pa.
District Offices in Principal Cities.

When inquiring specify EP916 ... see information request blank, pgs. 12-13

A New Catalog - AVAILABLE ON - CHEMICAL PROPORTIONING PUMPS!



This catalog illustrates and describes the Hills-McCanna Line of Chemical Proportioning Pumps used in continuous processing plants throughout the world.

The pumps are manufactured in 8 types, comprising over 200 sizes and provide a positive, dependable means for metering acids, alkalis, molten substances, dyes, coagulants, etc. Write for your copy today.

HILLS-McCANNACo.
2371 NELSON STREET - CHICAGO

When inquiring specify EP917 ... see information request blank, pgs. 12-13

EASTERN MIXERS**COMPLETE LINE**

of High-Speed and Geared Models for the Fast, Economical Mixing of All Fluids. Built for Hard Service.

● SIDE ENTERING AGITATORS

● PORTABLE MIXERS

● VERTICAL TYPES

Expertly designed to meet YOUR particular mixing problem.

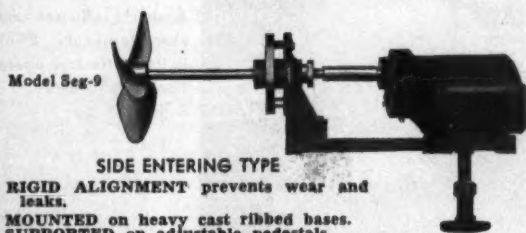
WRITE FOR FREE CATALOG

containing important data on mixing problems.



Model H1
Portable

SATISFACTORY
PERFORMANCE
GUARANTEED



SIDE ENTERING TYPE

RIGID ALIGNMENT prevents wear and leaks.

MOUNTED on heavy cast ribbed bases.
SUPPORTED on adjustable pedestals.

EASTERN ENGINEERING COMPANY

FOX STREET

NEW HAVEN, CONN.

When inquiring specify EP918 ... see information request blank, pgs. 12-13



with **PLASTIC ROCK!**

There's no time to lose! Speed up your loads! Plastic Rock, resurfacing your floors, makes them fast, skid-proof, dragless. U. S. Army and Navy use Plastic Rock in huge quantities.

Plastic Rock is a cinch to apply. It comes complete, packed in exact units. Nothing more to buy; uniform results assured; you can't miss. Simply mix and trowel right over your old floor. Old floor Saturday, new floor Monday. Sticks to wood, concrete, steel, stone, brick, glass; patches concrete perfectly to a feather edge. Plastic Rock is silent, dustless, shock-absorbent, spark-proof, easy to clean; does not splinter, crack, crumble, curl or loosen. Heavy loads only improve it.

Write for Report No. 220-P.

UNITED LABORATORIES, INC.

16805 Euclid Avenue

Cleveland, Ohio

Associated Offices in Principal Cities.

When inquiring specify EP919 ... see information request blank, pgs. 12-13

Control Instruments (Con.)**Flow Rate Indicator**

Differential Pressure—No Mercury

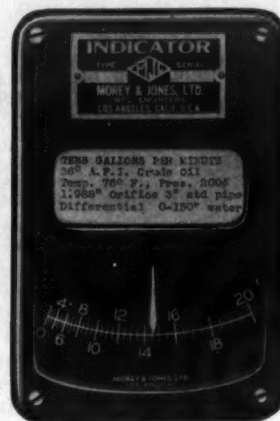
Uses—For indicating flow of liquids, steam and gases in all process industries; for balancing flows in refineries and absorption plants; for indicating rate of flow of cooling water and lubricating oils to bearings in prime-movers, cooling water to condensers and electrical transformers and water to filters and softeners, as well as for indicating liquid levels in boilers and tanks, whether under pressure or not.

Features—Calibrated bellows unit eliminates conventional mercury column, thus removing possibility of fluid contamination or injury to copper or brass fittings with which mercury amalgamates. Mechanism responds instantly to change of flow rates, or differential pressure, and has relatively small displacement; practically no accumulated error will result in readings, although leads to instrument are throttled to reduce effect of surges or line pulsations. Instrument does not have to be accurately leveled and may be transported in any position without locking parts in place, thus it can be used on such locations as boats, floating platforms, locomotives, airplanes, etc.

Description—Instrument may be calibrated for any differential pressure range between 0-30" and 0-225" of water. Permanent calibration is assured by construction methods and by working spring well within its elastic limit. Instrument's range may be changed in the field by inserting a new calibrated bellows unit—no linkages to adjust. Either high or low alarm contacts, or both, may be supplied to operate a signaling device when flow or liquid level reaches a predetermined point. When used as a flow indicator, instrument is actuated by the differential pressure produced by a primary device such as an orifice, venturi tube, or pilot tube inserted in the pipe line.

MOREY & JONES, LTD., Dept. EP, Room 835, 922 So. Hemlock St., Los Angeles, Calif.

When inquiring specify EP920 ... see information request blank, pgs. 12-13

**Humidity Recorders and Controllers**

Bulletin 525 portrays these instruments for air conditioning, and heating and drying processes. Information is given regarding the maker's wet-and-dry-bulb psychrometers with illustrations of the various types of fixtures available. Also, instruments for recording humidity and temperature directly on the same chart, using a hygroscopic measuring element, are described and sample chart records shown.

THE BRISTOL COMPANY, Dept. EP, Waterbury, Conn.

When inquiring specify EP921 ... see information request blank, pgs. 12-13

Automatic Motor Control

Booklet 88, a 9"x6", three-color job, lists some 22 examples of custom-built equipment which this company has made for new processes and new manufacturing methods requiring new forms of electric motor starters and motor controls. Each page shows the open and closed view of the equipment, plus a descriptive paragraph. It is an interesting presentation of this equipment.

THE ELECTRIC CONTROLLER & MFG. CO., Dept. EP, Cleveland, Ohio.

When inquiring specify EP922 ... see information request blank, pgs. 12-13

"Rotax Controllers"

Bulletin 184-3, 31 pages, describes these controllers for applications where "open and shut" or two-position control is desired. Several pages give complete technical data on construction and operation of the controllers, supplemented by schematic illustrations and diagrams. Actual charts are shown for four typical installations: control of temperature, humidity, liquid level and refrigeration. Other sections of the book have tables of chart ranges, signaling accessories, external relay sets, control valves, and measuring systems.

THE FOXBORO COMPANY, Dept. EP, Foxboro, Mass.

When inquiring specify EP923 ... see information request blank, pgs. 12-13

Automatic Reflux Control

Automatic, Accurate Distillation

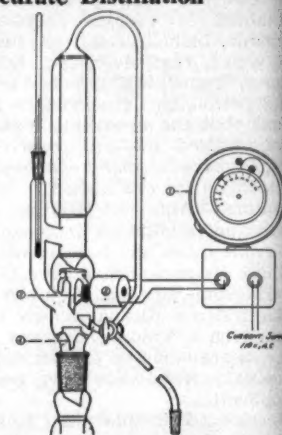
Uses—These electro magnetic automatic reflux control units are designed to yield reproducible distillation results in laboratory and semi-plant installations. Units have been installed in educational, coal tar by-products, gas analysis laboratories, etc.

Features—Absolute automatic reflux ratio control and reproducibility of distillations. Operator merely sets reflux ratio desired on electric time clock and from that point on the distillation proceeds automatically. Distillation can be readily adjusted with extreme accuracy simply by setting the time clock at the same point. Ease of assembly and flexibility permitted through use of spherical ground joints.

Description—Each unit is designed to meet some particular problem so that only feature common to all units is the principle of magnetic valve employed. A pivoted funnel, to which a piece of soft iron is attached, moved back and forth, drips condensate in either the take-off tube or the return tube (column tube). Soft iron is totally enclosed in glass.

ACE GLASS COMPANY, Dept. EP, Vineland, N. J.

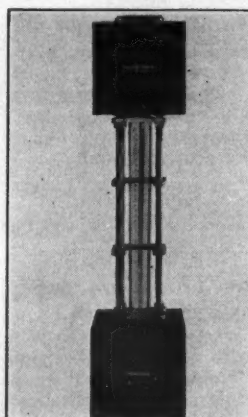
When inquiring specify EP924 ... see information request blank, pgs. 12-13

**FLOW METER**

Corrosive Chemical Service

Uses—Designed particularly for use in corrosive chemical plant service.

Description—End fittings consist of square blocks of hard rubber. Vertical connection is tapped into end of each block and horizontal connections can be tapped into any or all of the four sides. Blocks are also arranged for stud holes so that flange piping can be attached directly to these rotameters. Floats used can be of solid rubber or of hollow rubber loaded with mercury to give the required weight. Floats of precious metals can also be used, if desirable.



FISCHER & PORTER CO., Dept. EP, 113 West Penn Street, Germantown, Philadelphia, Pa.

When inquiring specify EP925 ... see information request blank, pgs. 12-13

Motor Time Acceleration

Flexible — Few Seconds To Several Minutes



Uses — Flywheel loads and heavy inertia loads requiring a long acceleration time (fans, saws, shears with flywheels, etc.), formerly requiring special accelerating relays, can use this Neo-Time control to provide any desired range of time. For use on A.C. and D.C. motors.

Features — Simple, flexible timing method permitting practically any time range from a few seconds up to several minutes per step. Operates directly from power source. Accurate because the operation is not dependent upon dashpots, delicate working parts or elements (such as oil) subject to temperature change or adverse atmospheres (dusts, etc.) Has adjustable resistor.

Operating Principle — Neo-Time principle is based on time required to charge a condenser to

a predetermined voltage. When this voltage is reached, condenser discharges through an industrial type Neon tube to cause first acceleration contactor to close. When this contactor closes, same time circuit is reenergized to close next accelerating contactor, and this operation is repeated until motor is operating on full line voltage.

Description — Has adjustable resistor in condenser charging circuit for convenient means of varying time. Resistor permitting short maximum time may be selected or one permitting maximum time of very long duration.

ELECTRIC CONTROLLER & MFG. CO., Dept. EP, 2698 East 79th Street, Cleveland, Ohio.

When inquiring specify EP926 ... see information request blank, pgs. 12-13

Automatic Industrial Controls

This 16-page booklet uses schematic drawings and photographs to illustrate its line of industrial control equipment such as air-operated valves for all pressures including two-pressure operating, three and four way, direct and reverse acting; precision instruments made by the company include time cycle controllers, temperature, pressure and condensate controls, time cycle recorders, and dial thermometers.

INDUSTRIAL INSTRUMENT CO., Dept. EP, 2249 14th Street, Akron, Ohio.

When inquiring specify EP927 ... see information request blank, pgs. 12-13

Moisture Detectors

Instant Detection, Surface and Subsurface



Uses — For testing wood, plaster, and other surfaces. For determining moisture in many products. Maker states the instrument has been used successfully for determining moisture in quinine sulphate, in clay products coming from the dryer and just before going to the kiln, in brooms as they come from drying ovens, etc.

Features — Detects all moisture present — both surface and subsurface. Makes tests instantly as needle electrode is pressed into the material. Special needle prevents marring surface. Moisture content read directly on dial—dry, wet, or very wet. Sim-

ple, compact, can be carried in pocket. No connection or electrical circuit required. Batteries last a year.

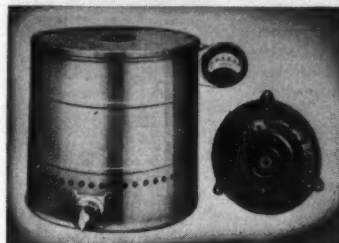
Description — Special bridge circuit insures high accuracy whether battery is new or old. Dial may be calibrated to meet special conditions. Weighs 2 pounds. Size 2½x3x7 inches. Battery operated — replacement cost \$2.10. Has rugged metal case, and is mailed complete, with electrode, in black fabricoid carrying case with handle. Delmhorst type.

COLLOID EQUIPMENT CO., Dept. EP, 50 Church St., New York, N. Y.

When inquiring specify EP928 ... see information request blank, pgs. 12-13

Ramsbottom Carbon Residue of Petroleum

Eliminates Molten Lead Hazards



Uses — This method is applicable to any motor or aviation lubricating oil, but is not recommended for residual fuel oils and gas oils.

Features — Electric heating bath accommodates 5 Ramsbottom bulbs in a cast metal cylindrical block embedded in a

5" thick foundation of thermal insulating material. This does away with need for using molten lead as the heating medium and, therefore, eliminates the hazards incidental to molten lead and lead vapors. Special electric heaters totalling 750 watts are securely clamped to side and bottom of cast metal block.

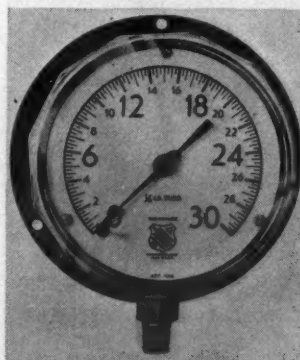
Performance — Solid bath is acceptable as indicated by quotation from A.S.T.M. Sub-Committee XXIII on Carbon Residue: "The Chairman presented comparative data obtained with a solid metal bath loaned by Precision Scientific Co., and a molten metal bath. These data showed that results obtained on five samples of oils having Ramsbottom Coke Values of approximately 0.1 to 10% agreed between the two baths within the accuracy of the method. It was agreed that next year the method should be revised to permit inclusion of the solid metal bath."

PRECISION SCIENTIFIC CO., Dept. EP, 1737 North Springfield Ave., Chicago, Ill.

When inquiring specify EP929 ... see information request blank, pgs. 12-13

Non-Breakable Gauge Cover

Transparent—Threads Onto Gauge Case



square inch.

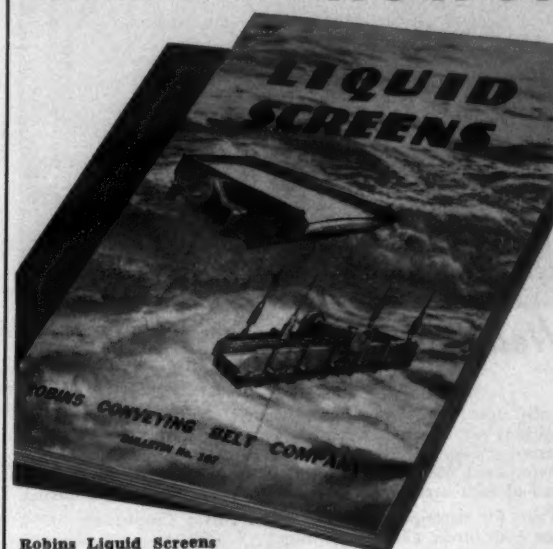
ASHCROFT AMERICAN GAUGE DIV., Dept. EP, Manufacturing, Maxwell & Moore, Inc., Bridgeport, Conn.

When inquiring specify EP930 ... see information request blank, pgs. 12-13

Features — Eliminates breakage of glass fronts on indicating gauges. Transparent—opens up dial of gauge and makes it easier to read. Makes case moisture and dust proof.

Description — Crystal clear plastic material forms this cover which threads onto gauge case. Material is non-breakable and has a tensile strength of about 5,000 lb. per square inch, and a compression strength of about 15,000 lb. per

SEND FOR THIS NEW BULLETIN NOW..



Robins Liquid Screens offer a most economical method of extracting solids from liquids. Low in first cost. Low in operating cost. Efficient.

Robins Conveying Belt Co.

15 Park Row, New York, N. Y.

Branches in principal cities

ROBINS

When inquiring specify EP931 ... see information request blank, pgs. 12-13

**SPEEDY
SMOOTH
SAFE**



it's THE
3500 lb. cap.
TRUCK

Here's the truck that operators dream about. It handles 3500 lb. loads with such unbelievable ease that, after ordinary trucks, working with a Red Streak is like taking a vacation. That's because of the special compound lift mechanism. Safer too. Release check and safety hook sees to that. And with a roll as smooth as silk, it speeds production all along the line. Why not find out about one of industry's pets?

FREE TRIAL OFFER

THE YALE & TOWNE MFG. CO., PHILA., PA.

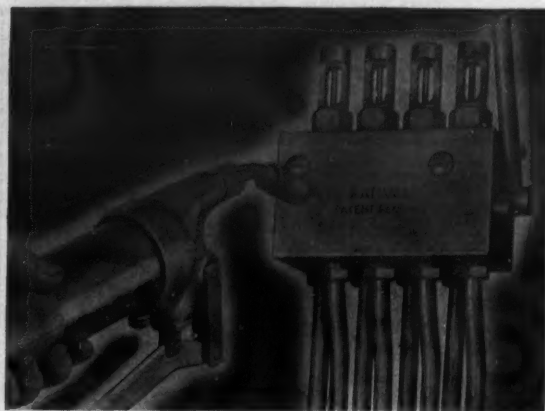
Gentlemen:

- ☐ Please send Red Streak for 15 day FREE TRIAL.
- ☐ Please send free folder.

Name

Address

When inquiring specify EP932 ... see information request blank, pgs. 12-13



New CENTRALIZED LUBRICANT MEASURING VALVE

Install new Farval Multiple Measuring Valves, and grease several bearings simultaneously from one connection—with your present pressure-gun—giving every bearing an exact, measured amount—and having a tell-tale indicator show the job is done. The amount delivered to each bearing is adjustable and—not a bearing is missed. Write for descriptive Bulletin. The Farval Corporation, 3257 East 80th Street, Cleveland, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Manufacturers of Automotive and Industrial Worm Gearing

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

When inquiring specify EP933 ... see information request blank, pgs. 12-13

IMPROVE YOUR MIXING

AT A REDUCED COST

Designed for use on large tanks — or where head room is not available on small tanks, the four models of "LIGHTNIN" Side Entering Mixers have made startling reductions in mixing costs.

Replacing heavy power consuming paddle or sweep types, these mixers do a more complete and thorough job of mixing. They also have opened up a new field by making available larger tanks for mixing than previously possible.

"LIGHTNIN" Mixers may be used in tanks of any material — wood, steel, glass-lined, alloy, metal, etc. — or any shape — round, vertical, or horizontal, oval, square, rectangular or in odd shapes such as HORTON SPHEROIDS, cone bottoms, etc.

Send for new catalog, B-66.

MIXING EQUIPMENT COMPANY, INC.

1055 Garson Avenue
ROCHESTER, N. Y.



When inquiring specify EP934 ... see information request blank, pgs. 12-13

Self-Priming Pump No Packing Gland or Mechanical Seal

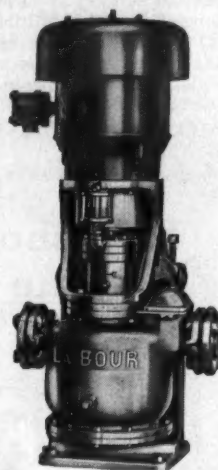
Uses—This self priming centrifugal pump, an entirely new model, is designed for use in chemical plants for corrosive liquids; filter press, vacuum evaporator, tanks and tank cars, and also many hydraulic uses.

Features — Compact, vertical design saves space. Has no packing gland or mechanical seal. Open impeller provides high efficiency. This Type R pump produces higher dry vacuum than older pumps, often exceeding 27 inches of dry vacuum, and reaches its maximum vacuum in from 1/2 to 1/10 the time of older pumps. Simple construction — wearing parts kept to minimum and are individually replaceable. Impeller is only moving part and there are no sealing rings or similar parts. Efficiency reduces power operating costs.

Tests—Each pump is dynamometer tested for head, capacity, and horsepower, and every pump is given standardized test to determine its speed of prime and dry vacuum ability. Every pressure casting is given at least one hydrostatic test for soundness and freedom from leaks. **Description**—Design permits rotation of entire unit on its bracket so that shaft lies in horizontal plane, thus giving same accessibility of horizontal pump. Access to interior without disturbing intake or discharge connection. Can be made out of difficult alloys, except lead. Open impeller is demountable from drive shaft. Drive shaft is mounted in two ball bearings and perfectly protected against entrance of fumes or liquids. Type R pump has multiplicity of pairs of throats and excessive inflow through one priming throat acts to retard inflow from next or from succeeding throats until correct balance is struck, thus throats operate simultaneously and in conjunction. Assembly connected by piloted and bolted bracket to the motor for perfect alignment—and no flexible coupling is needed. Driving shaft is sealed in liquid and nothing else, and no mechanical seals are needed.

LA BOUR PUMP CO., INC., Dept. EP, 1555 Sterling Ave., Elkhart, Indiana.

When inquiring specify EP935 ... see information request blank, pgs. 12-13



Hevi-Duty Lighting Unit Dust-Tight—Vaporproof

Uses—For use in locations where smoke, grime, fumes, steam and moisture are present, including such plants as cement and chemical, steel and wire mills, stamping and boring mills, foundries, forge shops, etc. For severe conditions.

Features — Reflector housing made of heavy gauge metal finished in fused-to-metal porcelain enamel over which is acid-resisting, baked-on synthetic enamel. Housing is contoured for protection against shocks and blows. Glass cover sealed in special-formula, non-hardening gasket which seats



against reflector housing, making unit dust tight and vaporproof. Reflectors have multi-conical-section contour for exacting light control.

Test—"Herculite" glass cover unaffected by extreme temperature changes and has impact resistance. One and one-half pound steel ball can be dropped from height of 7 feet without breaking or shattering glass. Added safety feature is that should glass be broken, it disintegrates into tiny, blunt fragments instead of splintering.

Description—Glass and gasket are secured in cast aluminum, hinged cover frame, which is locked to housing by six thumb-operated compression-latches. Latches lock or unlock with quarter turn, and compress cover gasket to seal reflector opening when given extra turn beyond lock position. Two types of Alzak aluminum reflectors are available: one highly polished, specular type for high mounting; the other etched surface, spread-type distribution for medium mounting. Reflectors are removable, being held by 3 screws. Change in lamp position widens light distribution for low mounting. These units take lamps from 750 to 1500 watts.

BENJAMIN ELECTRIC CO., Dept. EP, Des Plaines, Illinois.

When inquiring specify EP936 ... see information request blank, pgs. 12-13

"Whirljet" Spray Nozzles Non-Clogging, Hollow Cone Type

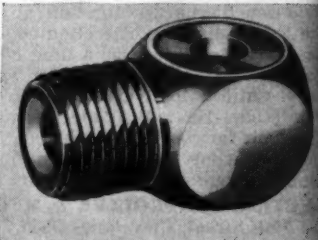
Uses — For air conditioning, roof cooling and chemical processes.

Features — Non-clogging centrifugal type with uniform distribution. One-piece construction.

Description — Nozzles are available in 1/4", 3/8" and 1/2" male pipe connection. Capacities range from .1 to 2.5 gallons per minute at ten pounds pressure. Standard stock construction is brass, and other metals can be specified.

SPRAYING SYSTEMS COMPANY, Dept. EP, 4021 West Lake Street, Chicago, Illinois.

When inquiring specify EP937 ... see information request blank, pgs. 12-13



Motorized Pipe Cleaners

Open and Clean Oil and Gas Lines, Coils, etc.

Uses — For opening and cleaning clogged pipes of all kinds; oil and gas lines, heating coils, cooling coils, water lines, sewers, drains, etc.

Features — Helically coiled cable is operated by electric motor, which rotates it. Cutting tools, brushes or other special tools are attached. Length after length of cable can be added as required.

Operation—This cleaner, or Ferret, consists of a 18' length of helically coiled cable which is fitted into the pipe, clutch is depressed which spins the cable. Additional lengths of cable are added by means of special coupling. Rapid rotation of cable scours the line and clears up ordinary obstructions. Special tools provided for obstinate obstructions as tree roots, corrosion, barnacles.

Available in several sizes. Small, compact and easily carried.

PITTSBURGH PIPE CLEANER CO., Dept. EP, Oliver Bldg., Pittsburgh, Pa.

When inquiring specify EP938 ... see information request blank, pgs. 12-13

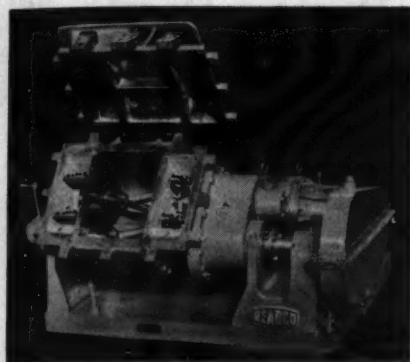


NEW SOLUTIONS OF PLANT PROBLEMS

From the practical experiences of chemical and process manufacturers applying available products in new ways

Laboratory Mixing Under Vacuum and Pressure

Combined Unit Mixes Corrosive Material



Problem — To provide shredding or defiberizing in which part of mixing is done under vacuum and balance under pressure, generated by reaction of mix . . . pressure to be maintained for

extended periods without benefit of outside pressure. Mix highly corrosive, no lubrication contamination permitted. **Solution**—A Single Packing Gland Vacuum Mixer (see cut) was adapted with special high pressure cover, with clamps for added support, tested to operate at pressures up to 250 pounds.

A high pressure jacket was provided for circulation of heating and cooling mediums as heating and cooling were necessary during mixing operation. Corrosive action controlled by using a special alloy, solid cast bowl, bowl ends and cover. Shredding arms also made of special alloy.

Results—This is an entirely new development, recently put into operation and so no comprehensive data are available, but unit is operating satisfactorily to date.

READ MACHINERY CO., INC., Dept. EP, York, Pa.

When inquiring specify EP939 . . . see information request blank, pgs. 12-13

Avoid Joint Failures on Paper Pulp Cookers

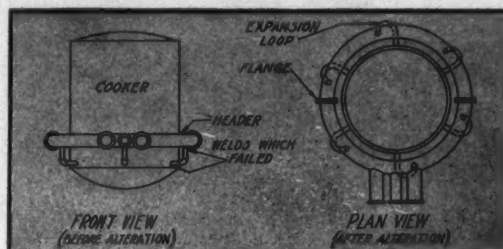
Redesigned Connections Eliminate Excess Stress

Problem—Failure of joints connecting nipples to headers and cookers . . . on stainless steel bleaching cookers operated by pulp and paper company. Each cooker was encircled with a header through which steam, caustic, and water were supplied together. Circular headers, about 14 ft. in diameter, were made of 6-in. stainless steel pipe with a wall thickness of 1/4 in. Each header connected to cooker by six 2-in. leads, each of which consisted of two nipples and a cast stainless steel elbow.

Investigation revealed failures were caused by rigidity of headers and cookers, shortness of nipples and thickness of cast elbows . . . all of which combined to concentrate in connecting joints all the contraction and expansion stresses. Two other contributing factors were the high coefficient of expansion and low heat conductivity of the stainless steel itself. (Thus problem was not one of joint strength, but involved design of joints.)

Solution—To reduce operating stresses at the joints it was determined to provide expansion loops in lines connecting each header and cooker. The leads were first

disconnected from cookers. Each of the 2-in. leads was removed from first header and the six holes in header expansion loops could be installed between header and were welded shut. Six new holes were cut in header so expansion loops could be installed between header and cooker. Each loop was formed with a 15-in. radius and welded in place (see sketch). All welds were reinforced with stiffeners.



Results—With these modifications the equipment has been giving satisfactory service, having eliminated the basic trouble.

Detailed information available from LINDE AIR PROD. UCTS CO., Dept. EP, 30 East 42nd St., New York, N.Y.

When inquiring specify EP940 . . . see information request blank, pgs. 12-13

Hoist Handles Refuse

Removes Materials from Pit to Draining Floors



Problem — To dispose of refuse from scouring room, after it had been brought from third floor to pit on ground.

Solution — The Alexander Smith & Son Carpet Co., Yonkers, N. Y. utilize a Hevi-Lift hoist mounted on a

jib crane, equipped with a 1/2 yard single line bucket. After scouring, room refuse materials are brought from third floor to a pit on ground, the hoist then removes refuse from pit to concrete draining floors. After liquid has been drained off, bulk materials are loaded on a truck.

Operation—In operation of the single line grab bucket the yoke of bucket is hooked over hoist hook. When bucket is lowered, weight is evenly distributed. Hoist hook is then lowered, allowing bucket block to slide down guide rods until hook of bucket block engages center hinge. Upon hoisting, closing action is started, each bowl digging into material with equal force. When bucket is full and closed, hoisting action may begin. After bucket is carried to dumping point it is opened by a hand-rope trip.

HARNISCHFEGGER CORP., Dept. EP, Milwaukee, Wis.

When inquiring specify EP941 . . . see information request blank, pgs. 12-13

(To secure **EQUIPMENT PREVIEW** for your key men, turn to 'request slip' . . . pages 12 and 13.)

fifty

Years of Gears



A HALF century of making all types of cut gears for every conceivable purpose has proved the D.O. James service a valuable one. Speedy production without sacrificing D.O. James manufacturing perfection assures you of quality gears when you need them. We offer you the accumulated experience, skill and knowledge of fifty years of successful gear making. Let us help you with your next requirements

D.O. JAMES



Send for Catalog No. 150—180
Pages of Engineering Data,
Weights and Prices on all Types
and Kinds of Speed Reducers

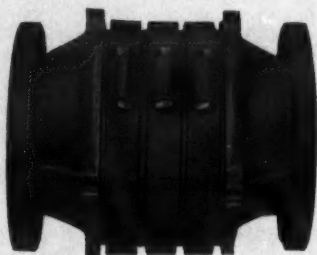
**D. O. JAMES
MANUFACTURING CO.**
Established 1888

1120 WEST MONROE STREET
CHICAGO, ILLINOIS

When inquiring specify EP942 . . . see information request blank, pgs. 12-13

ABSORB

Expansion in Process Lines
compactly and without maintenance



**Use BADGER Corrugated
Type Expansion Joints**

We say "compactly" because BADGER Expansion Joints take up no more space on a pipe line than the average fitting. They are particularly ideal for lines in tunnels or in cramped quarters. And this compactness is economical, too, when insulation is necessary. We say "without maintenance" because the BADGER Expansion Joint does not use packing, hence requires no servicing.

For conditions that would attack copper, we can supply stainless steel expansion joints. Write for descriptive bulletin.

E. B. BADGER & SONS CO.
75 PITTS ST., BOSTON, MASS.

When inquiring specify EP943... see information request blank, pgs. 12-13

New Solutions (Con.)

**Mix Abrasive Corrosive
in Rubber Lined Bowl**

From Pulverized Solids and Heavy Liquids
to Semi-Plastic Mix

Problem—

The mixing of abrasive corrosive material, including pulverized solids and heavy liquids, into a final form of a semi-plastic corrosive abrasive mix.

Solution—A Double Arm Mixer, of type illustrated, was used with the unique feature of a

rubber lined bowl. Stellited arms to resist abrasives, completely dust-tight cover, permanent charging connection located in stationary portion of cover, and large diameter dump trunnion concentric with front arm.

The rubber lined bowl eliminates corrosion and at same time resists abrasive action of material. Abrasives do not become embedded in or grind the surface as with metal.

Results—This is a recent development and no comprehensive data are available. But operations to date and previous experiences under fairly similar conditions indicate satisfactory solution of problem.

READ MACHINERY CO., INC., Dept. EP, York, Pa.

When inquiring specify EP945... see information request blank, pgs. 12-13



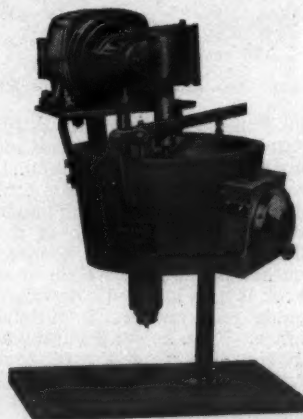
**Avoid Dye Contamination
in Making Cosmetics**

Electric Heater Uses Monel Inner Pot

Problem—(1) To avoid contamination of dyes, with resultant color change, from contact with ordinary metals. (2) To agitate compound at sufficient speed to keep inert materials in suspension during pouring, yet slow enough to avoid bubbles getting into mix... during heating and compounding of lip-sticks.

Solution—(1) This electric heater is equipped with an inner pot of Monel (either cast or fabricated Monel or stainless steel sheet) and agitator blade and outlet needle valve shaft and seat also of same metal... in short, all points that come in contact with mix. (2) The Monel agitator blade is driven by an electric motor through a reduction gear, at speed of 60 R.P.M.

Operation—Heat is applied uniformly by multiple heat-



ing circuits, baked to sides and bottom of inner pot which is sealed in an insulated housing. Heat controlled by variable, selective thermostatic control. Heated outlets eliminate "freezing" when pouring. Illustrated pot is an adaptation of a standard electric wax heater and pourer... capacity is 2 gals. 3 gals. and 10 gals. models also available.

Other Uses—These heaters are applicable in dispensing waxes, and other compounds, without agitator, with inner pot of cast aluminum, etc. And other uses will suggest themselves.

STA-WARM ELECTRIC CO., Dept. EP, Ravenna, O.

When inquiring specify EP946... see information request blank, pgs. 12-13

**Hood Design For Dust
and Fume Collecting**

Gives More Positive, Effective Control

Problem—To control more effectively all dust and fumes formerly evading collection, through better design of dust collector duct terminal hood.

Solution—Three types of operations were studied. (1) foundry shakeouts, (2) spray booths, (3) heating furnaces. Travel of dust, soot and fumes was charted and check made of accumulations not entering ducts—thus establishing range beyond which dust and fumes not collected.



Experiments proved 3 factors affected efficiency: (1) natural drafts which varied in all cases and from season to season; (2) reflex actions, caused by impact, causing fumes to go to either side; (3) bulky objects causing fumes to deflect to side or above hood opening.

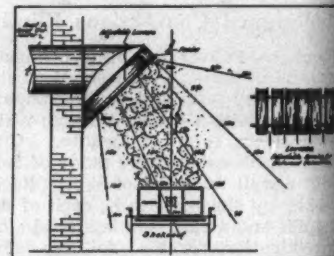
Illustration shows final design adopted. Best location determined as above and to one side of operation, with curtains on sides and back to prevent eddy currents. Exhaust ducts could be taken from plenum back of louvers, upwards, downward or sideways as best suited application.

Set of movable louvers adjustable to meet varying conditions. Where dust and fumes tend to go to right or left, louvers can be moved toward middle, closing off plenum chamber at center and pulling dust in from two sides. Flexibility and adjustability of louvers permits quick changes to meet varying conditions.

Results—Manufacturer states design shows marked improvement in efficiency... several have been installed in industrial plants. Complete details on request.

CLAUDE B. SCHNEIBLE CO., Dept. EP, 3961 Lawrence Ave., Chicago, Ill.

When inquiring specify EP947... see information request blank, pgs. 12-13



EVERYTHING about
The Gotham bespeaks
gracious living—its spacious
rooms, its atmosphere of
good taste, its superb cui-
sine... Elegance is appar-
ent; economy not forgotten.

Under the same
Management as
The Drake
CHICAGO
The Blackstone
CHICAGO
The Evanshire
EVANSTON, ILL.
The Town House
LOS ANGELES
A. S. Kirkby
Managing Director

The Gotham

Fifth Avenue at 55th Street · NEW YORK CITY

When inquiring specify EP944... see information request blank, pgs. 12-13

Air Motored Mixer

For Hazardous Mixing Operations



Uses—Small mixer, designed especially for use on 5-gallon batches. In use on most flammable materials—varnish, gasoline, lacquer, high explosives, etc. **Features**—Fire and explosion hazards eliminated through air motor operation. Air throttle control of speed makes use of particular importance on jobs where viscosity of material changes during mixing.

Description—Clamp type, direct drive agitator. Variable speeds through air intake control (30-6000 RPM). Has $\frac{3}{8}$ " chromium-plated or stainless steel shaft, 12" long, with one 3" triple blade, chromium-plated bronze or stainless steel propeller. Longer shaft, different propeller and other metals are supplied to order.

ECLIPSE AIR BRUSH CO., Dept. EP, 390 Park Avenue, Newark, N. J.

When inquiring specify EP948 ... see information request blank, pgs. 12-13

motors ... motors as well as gear reductions and controllers built completely by this manufacturer.

Description—Motors respectively propel truck, elevate and lower scoop and load, operate rotating mechanism of scoop. Separate limiting device controls motor which elevates and lowers load by means of high-safety factor, double roller chains.

Motors are provided with slip clutches and limit switches which protect mechanical operating mechanism, eliminating need for fuses in power lines. Dynamic electric brakes supplement mechanical foot brakes for operation on ramps. Regenerative load-lowering mechanism for returning power to battery.

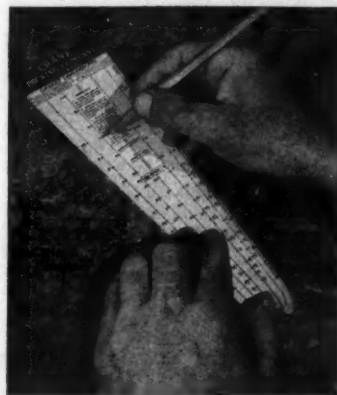
Scoop loads itself by impact and by crowding and rotary motion. Designed, by shape and course of travel, to undercut the pile. Design of unit is streamlined, all vital parts are housed.

ELWELL-PARKER ELECTRIC CO., Dept. EP, 4205 St. Clair Ave., Cleveland, O.

When inquiring specify EP949 ... see information request blank, pgs. 12-13

Gasket Marker and Data

To Mark Gaskets Without Dividers—Carries Necessary Information



Uses—Designed as a handy tool for marking and outlining gasket sizes on sheet packing, without requiring use of dividers or referring to gasket tables or taking more than one measurement.

Features—All necessary information is printed on this device. Handy, quick and convenient for marking gaskets for extra heavy, medium standard and low pressure flanges, both ring

and full-face types. Claimed to save time and reduce waste of gasket materials.

Example of use—To cut a gasket for 6" pipe, extra heavy flange, ring style ... locate center of gasket by thrusting thumb tack through center hole at bottom of marker, place pencil point through 6" hole on center line of marker, representing I.D. of pipe, and circle is scribed. To find O.D. line of gasket, place pencil in 6" hole, left hand column, representing ring O.D. for extra heavy flange, ring style ... and scribe circle. Gasket is now ready for cutting. Price fifty cents.

CRANE PACKING CO., Dept. EP, 1800 Cuyler Ave., Chicago, Ill.

When inquiring specify EP950 ... see information request blank, pgs. 12-13

Surface Preserver

For Concrete, Brick, Stucco, etc.

Features—This system utilizes two materials (1) a penetrating repellent (Por-Lox Waterproofing) which soaks into concrete, barring moisture from entering pores or minute crevices. (2) a finish coat in color (Por-Lox Colored) which bonds securely to waterproofing coat. Waterproofing may be used alone if so desired.

Application—Waterproofing should be applied to clean surface at a rate of not more than 75 sq. ft. per gal. Applied hot, at 160 to 170 degrees F. After 48 hours, following waterproofing, the color finish may be applied. One coat, at a rate of approx. 150 sq. ft. per gal. Allow 48 to 72 hours before subjecting to traffic.

THE TRUSCON LABORATORIES, Dept. EP, Milwaukee Junction, Detroit, Mich.

When inquiring specify EP951 ... see information request blank, pgs. 12-13

Profits FROM WASTE WATER

with this LIQUID SCREEN

● The Link-Belt Vibrating Screen offers a low-cost, efficient method of removing solids from factory waste water; thus preventing pollution of adjacent streams. In many instances much of this waste matter can be made into a valuable by-product.

A recent installation at a tomato canning plant removes solids which are used for fertilizer. It has a capacity of 300 gallons of waste water per minute. Solids are discharged over front of screen into a barrel at the rate of about one barrel every 25 minutes.

Other units are in service at citrus canning plants, textile mills, tanneries, steel mills, vegetable canneries, by oil producers, etc. Let us tell you more about the profit possibilities of recovery by this method.



LINK-BELT COMPANY

Philadelphia
Chicago Indianapolis
San Francisco Toronto
Offices in Principal Cities
TFS

LINK-BELT Vibrating SCREEN

When inquiring specify EP952 ... see information request blank, pgs. 12-13

"ACID-PROOF" YOUR FLOORS

with DURA-TRED!



Correct the unsightly, destructive effects which mineral acids work on your floors using a single, quick, easy application of Dura-Tred over-all.

Wherever dipping, pickling, plating and etching is done—wherever nitric, sulphuric, muriatic, and other acids or compounds like chromic, etc., are used—Dura-Tred is highly resistant. Defies damage to floors.

Easy To Apply Over Concrete—Metal—Masonry

Dura-Tred comes to you completely factory-mixed. Apply directly from the package on floors subject to extreme acid or wearing conditions, inside or outdoors.

Bear in mind—Dura-Tred will not only combat acids; it will handle your heaviest load without leaving any mark because it is solid-wearing service throughout. Let our Trial Offer prove that Dura-Tred will reduce your acid problems to a minimum. Write!

Get Full Details of Trial Offer—Descriptive Circulars—No Obligation!

DURA-TRED COMPANY

216 NORTH CANAL ST. CHICAGO, ILLINOIS

When inquiring specify EP953 ... see information request blank, pgs. 12-13

Have You A "New Solution"?

If you have recently solved a problem in chemical process manufacturing, through a new application or new use of your regular products, The Editors invite you to submit the facts for publication in this department.

In submitting your "solution" please be sure to give the pertinent facts of (a) the problem, (b) just what was done and (c) what the results were.

Send to The Editors, EQUIPMENT PREVIEW
737 N. Michigan Ave. Chicago

Power Scoop Truck

Power Separately Applied to Scoop, Elevator and Wheels

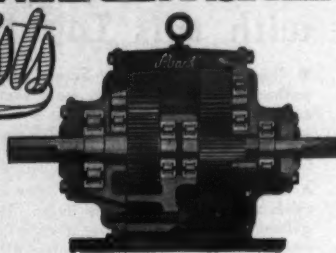
Uses—For handling loose materials, whether in friable condition or in sizes suitable for ready handling. Stoker coal, complete fertilizers or their ingredients, sulphur, nitrates, salts, etc., are typical of materials that are loaded, transported, elevated and dumped by truck with a "one-man crew."

Features—This is said to be one of first units in which separate motor power is applied to scooping mechanism as well as to elevating and traveling operations. Unit consists of (a) power industrial truck (b) scoop of $\frac{1}{2}$ to 1 yard capacity, capable of being rotated more than 100 degrees (c) power mechanism for elevating and lowering load.

Electric or gas-electric power plant is optional. Operating power furnished through three separate standardized



SPEED REDUCTION



Engineers and power transmission men in the chemical industry know that Abart Speed Reducers deliver. From long experience, they also know that when they are up against a speed reduction problem, they can find the right equipment in the Abart catalog. Over 75 types and sizes are listed—and practically any reduction to specification. Many sizes in stock for immediate shipment. Write for this catalog today.



GEARS cut to B/P or specifications
Let us quote.



When inquiring specify EP954 ... see information request blank, pgs. 12-13

"BLACKMER Gets Our Pump Business because:

1. AUTOMATIC Take-up for Wear . . .
2. Positive Displacement . . .
3. No Priming Required"



Capacities up to 700 GPM

Every rotary pump has the advantages of self-priming and positive displacement—but ONLY BLACKMER offers Automatic Take-up for Wear as well! And it's this exclusive engineering advancement which enables BLACKMER Rotary Pumps to out-perform and out-last other types.

What is your pumping problem? Let us show you how it can be solved at a BIG SAVING in overall cost.

May we hear from you?

BLACKMER PUMP COMPANY
1992 Century Ave., Grand Rapids, Mich.

BLACKMER
AUTOMATIC TAKE-UP FOR WEAR
ROTARY PUMPS
EXCLUSIVE BUCKET DESIGN

When inquiring specify EP955 ... see information request blank, pgs. 12-13

NEW LITERATURE

The following literature has been issued recently by manufacturers of the products discussed and is available to process production executives on request. Address requests to the publishers by using handy request form, pages 12-13, or write to the manufacturers direct.

Linings For Corrosive Services

Bulletin No. 1500 describes "Resilon"—corrosion-resistant materials with a wide field of applications for pickling and plating tanks, beer fermentation tanks, acid-proof floors, ferric-chloride tanks, repairing cracks in acid-proof vessels, pipe lines, etc. Corrosion-resistant properties, uses for the product, physical properties, and typical installation details shown in line drawings are given in this bulletin. Available upon request.

THE U. S. STONEWARE CO., Dept. EP, Akron, Ohio.

When inquiring specify EP956 ... see information request blank, pgs. 12-13

Handling Equipment Catalog Shows Special Applications in Chemical Process Plants

Special applications in chemical process manufacturing are illustrated in this comprehensive catalog of the manufacturer's wide line of handling equipment. The book is elaborately done, 64 pages including cover, hundreds of photographic illustrations of equipment and applications. It comprehensively covers the wide lines of electric industrial trucks, trailers, dump bodies, hand lift trucks, skid platforms, etc. Gives detailed descriptions and informative data. The book is attractively done in several colors. Available on request.

YALE & TOWNE MFG. CO., Dept. EP, 4530 Tacony, Philadelphia, Pa.

When inquiring specify EP957 ... see information request blank, pgs. 12-13

Handbook on Bolts and Screws

"Better Anchorage for Bolts and Screws" is the title of this 38-page, 3 1/4" x 6 1/4" handbook, printed in green on white stock. Profuse illustrations, many tables and charts, and other valuable data ably tell the story of these products.

THE RAWLPLUG CO., INC., Dept. EP, 98 Lafayette St., New York, N. Y.

When inquiring specify EP958 ... see information request blank, pgs. 12-13

Wood Preservation Machinery

This well-illustrated bulletin of 32 pages touches on the history of wood preservation, kinds of preservatives used in modern treatment of woods, methods and processes to preserve them, economics of wood preservation, types of machinery used and gives numerous designs of complete plants. The booklet deals with treatment of mine timbers and flooring blocks and includes many tables giving weights and measures of piling, telegraph poles, cross arms and ties. Material is well-handled throughout.

ALLIS-CHALMERS MFG. CO., Dept. EP, Milwaukee, Wisconsin.

When inquiring specify EP959 ... see information request blank, pgs. 12-13

Jar Mills

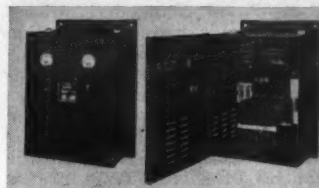
This 20-page catalog is distinguished by its complete listing and thorough handling of descriptive material on many types of the company's jar mills. An interesting section is devoted to operation of the mills, the proper selection of a grinding medium, and the wide variety of uses of these mills. Specifications are supplied for each type of mill. Catalog No. 47 is available upon request.

ABBE ENGINEERING CO., Dept. EP, 50 Church Street, New York, N. Y.

When inquiring specify EP960 ... see information request blank, pgs. 12-13

Selenium Rectifier

Blowers and Cooling Equipment Not Necessary



Uses—Can be used for practically any industrial direct current requirement where other types of rectifiers or motor generator sets are commonly used. This includes magnetic chucks and

clutches, lifting magnets, elevator, machine tool and other d.c. controls, solenoid valve operation, prevention of electrolytic corrosion, battery charging, operation of isolated d.c. motors, circuit breaker operation, alarm, signal and communication systems.

Features—Uses selenium plates which operate on principle similar to other dry plate type rectifiers. Selenium plates are fewer in number and of smaller size. Efficiency affected very little by temperature and no blowers or special cooling equipment is necessary. Output lowered only approximately 5% in 10,000 hours, and age has no effect in the reverse current blocking direction. Withstands overloads as high as 75% for several hours without deterioration.

Description—Type SR selenium rectifiers are made to order in full wave bridge or half wave types, for practically any desired d.c. voltage and current output. Rectifier elements, transformer, fuses and controls are mounted in ventilated steel cabinets. Control is affected through dial tap switches. Transformers are equipped with low voltage primary taps, or voltage stabilizers can be furnished to order. Both primary and output circuits are fused. Standard types are normally furnished with d.c. voltmeter and ammeter, but other meters can be included in specifications.

FANSTEEL METALLURGICAL CORP., Dept. EP, North Chicago, Ill.

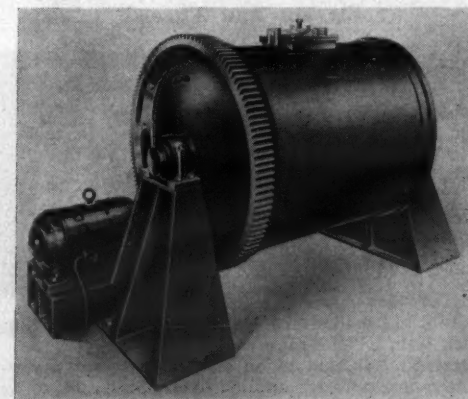
When inquiring specify EP961 ... see information request blank, pgs. 12-13

Ball and Pebble Mills

Uses Less Heating or Cooling Media

Features—Roller bearings, self-aligning type, used to reduce power and maintenance costs. Ends and shell are fully jacketed to reduce required amount of heating or cooling media. Entire mill body is of unit construction as all sizes up to and including 36" diameter are constructed with pressed steel rather than cast steel heads.

Description—Some 24 sizes varying from 16"x21" to 8'x10'. Mills are made lined and unlined, jacketed and



un-jacketed. All mills are equipped with revolution counter. All lined mills have standard doors which can be easily replaced; after new door is installed old frame may be returned for full credit if it is in good condition. Mills are provided with ample gear reduction drives that incorporate excess overhung load capacity. May be con-

structed of materials to best meet operating conditions. Have integral mill and motor stands in order to eliminate gear spread and misalignment of driving pinion. All mills are supported on stands of heavy steel plate fabricated by welding, and may be designed for any height requirements without use of sub-stands and additional bolted joint.

H. K. PORTER CO., INC., Dept. EP, 49th & Harrison St., Pittsburgh, Pa.

When inquiring specify EP962 ... see information request blank, pgs. 12-13

"3-in-1" Face Shield

Interchangeable Parts

Uses—When fitted with Plastacele window, used for spot, flash and gun welding, buffing, polishing, wire brushing, die casting, flying scale, etc. Wire screen window makes shield suitable for babbitting, heat protection, etc. Fibre front and glass holder offer protection for acetylene welding, burning, scarfing, etc.

Description—Screen, fiber or "plastacele" guard may be quickly buttoned on. Windows are buttoned on Spark



Deflector (fibre forehead guard). Absorbent real leather sweatbands, backed by wool felt, keep perspiration out of eyes. Plastacele windows are aluminum bound to permit individual fitting to suit wearer. When not in use, window can be tilted upward, and in that position protects from overhead glare. Plastacele window is clear; light, medium or dark green and amber (optional).

THE BOYER-CAMPBELL CO., Dept. EP, 6538 Antoine St., Detroit, Michigan.

When inquiring specify EP963 ... see information request blank, pgs. 12-13

Steam Vapor Spray Cleaner

Pressures Up to 150 lbs. in 1½ Minutes

Uses—For cleaning machinery, floors, exteriors, skylights, motor blocks, mixers, refrigerator cars, tank cars, etc.

Features—Stationary or portable, instant starting (electric spark ignition); pressures up to 150 lbs. within 1½ minutes; simplex type (continuous vapor flow) or fully automatic type (nozzle control); pressure atomizing fuel oil burner; non-clogging heating coils; all mechanism on end panel with quickly removable cover. Other sizes and capacities available.

HOMESTEAD VALVE MFG. CO., Dept. EP, Coraopolis, Pa.

When inquiring specify EP964 ... see information request blank, pgs. 12-13



New Literature (Con.)

Sewage Corrosion

Eight pages make up this booklet, "The Resistance of NICKEL to Corrosion by Sewage." Test methods and results are discussed in detail, supplemented with tables and illustrations showing relative corrosions of metals in sewage. A page shows the actual and potential applications of this alloy. Available upon request.

INTERNATIONAL NICKEL CO., Dept. EP, 67 Wall Street, New York, N. Y.

When inquiring specify EP965 ... see information request blank, pgs. 12-13

Turbine Pumps

Bulletin 260-B11D covers the maker's line of industrial pumps. Pages 2, 3, and 4 cover design features in detail, including cut-away of pump, diagram of internal seals, typical performance curve and standard specifications. Installation photos on pages 5 and 6 show variety of applications in such industries as brewing, cleaning and dye works, chemical plants, distilleries, plating plants, food processing, gasoline bulk stations, etc. Selection tables and price lists are carried in supplemental bulletin, and both are available upon request.

ROOTS-CONNEVILLE BLOWER CORP., Turbine Pump Division, Dept. EP, Connersville, Indiana.

When inquiring specify EP966 ... see information request blank, pgs. 12-13

Vari-Pitch Sheaves

Bulletin No. 1261-B illustrates and describes the maker's Vari-Pitch Texrope Sheaves, with particular reference to the stationary control type for occasional changes of speed and the motion control type for use where frequent speed changes are necessary. Includes dimension sheets and a wide variety of installation pictures.

ALLIS-CHALMERS MFG. CO., Dept. EP, Milwaukee, Wisconsin.

When inquiring specify EP967 ... see information request blank, pgs. 12-13

Cutting Tool Manual

This manual of 56 pages "tells all" about J-Metal cutting tools. It is profusely illustrated and packed with a large amount of valuable material. Many suggestions are given for proper grinding of J-metal tools, how to get the best results, recommended speeds and feeds, etc. The appendix has hardness conversion tables and S.A.E. steel specifications. New chapter on "Tool Holders and Adaptors" presents numerous designs and specifications for holding devices which allow J-metal solid tool bits to be salvaged and used until they become extremely short. Available upon request.

HAYNES STELLITE COMPANY, Dept. EP, 205 East 42nd St., New York, N. Y.

When inquiring specify EP968 ... see information request blank, pgs. 12-13

Piston-Ring Expansion Joint

A revised, 12-page, illustrated booklet describes this type of expansion joint—stress being laid on the fact that the joint can be completely unpacked and repacked under full operating pressure without shutting off steam or interrupting service. Folder includes letter from testing laboratory showing results of test. Bulletin No. 35-15A available on request.

AMERICAN DISTRICT STEAM CO., Dept. EP, North Tonawanda, N. Y.

When inquiring specify EP969 ... see information request blank, pgs. 12-13

Water Softener Catalog

This attractive, 12-page, lithographed folder describes the company's water softeners of the up-flow and down-flow types. One section describes in detail, and illustrates with line drawings, the zeolite process of water softening by both the upflow and downflow methods. Specifications, ordering procedure and other items complete the booklet. The back cover shows the company's guarantee.

THE DURO CO., Dept. EP, Dayton, Ohio.

When inquiring specify EP970 ... see information request blank, pgs. 12-13

NEW READCO UNITS

AT THE CHEMICAL EXPOSITION

GRAND CENTRAL PALACE N. Y. C., DEC. 4-9, 1939

Booth 308-309 Second Floor

AT THE TOP OF THE STAIRS

On Display

1. NEW VIBRATING SIFTER

For sieving powdered and granular materials READCO Engineers have developed an entirely new principle in Vibrating Screen Sifters. Faster sieving is accomplished through finer mesh screen by a combined vertical and lateral motion. These Sifters are built in several sizes and capacities to meet the exact requirements of any material and production demand.



2. NEW LABORATORY MIXER

To facilitate cleaning the new READCO Lab Mixers are built for quick and easy dismantling of bowl and arms. They are comparable in other design features to the larger READCO Mixers used in commercial production. Bowls may be jacketed and equipped with Vacuum Covers if desired. Common metals or Commercial Alloys may be used in their construction to suit laboratory requirements. The one quart capacity is illustrated.



3. NEW DOUBLE ARM VACUUM MIXER

One of the features of the READCO exhibit will be this Single Packing Gland, Double Arm, Vacuum Mixer developed for mixing paints, inks, plastics, and various compounds. Close Clearance Agitators, Heavy Mixing Bowl, Adjustable Vacuum Cover, and Safety Controls are other outstanding features. This mixer is built in sizes varying from 2½ to 400 gallons working capacity. The 200 gallon capacity is illustrated.



4. NEW BLENDER AND MIXER

For mixing semi-plastic and blending thin liquids, dry materials or wet masses, READCO Engineers have developed a new line of Blenders and Mixers. Special features on the machine illustrated include a two speed discharge screw, time controlled with an auxiliary outlet for discharge into large containers. Working Capacity Blender illustrated, 500 gallon.



Booth 308-309 Second Floor

AT THE TOP OF THE STAIRS

READ MACHINERY CO. INC. YORK, PA.

When inquiring specify EP971 ... see information request blank, pgs. 12-13

RUBBER TIRED TRUCKS SAVE FLOOR REPAIRS



Moulded-on Tires



One piece frames



Jak-Tung Trucks

And they make materials handling easier too, and more economical. Your choice of molded on or pneumatic tires in wide variety of sizes.

NEW LOW PRICES ON STEEL FRAME TRUCKS

A full range of sizes and styles to choose from. Metal tired wheels if you prefer. One piece steel frames, Hyatt roller bearings, cast steel axle boxes and pockets, hardwood platforms . . . at prices lower than many wooden frame trucks of like capacities.

Special Bodies to handle all kinds of materials — box bodies, stake end racks, etc. Special bodies built to your order. Also, "lift truck type" Jak-Tung trucks.

Ask for catalog illustrating uses.

TRUCK & CASTER CO.
3974 Mississippi River
KEOKUK, IOWA

THOMAS

When inquiring specify EP972 . . . see information request blank, pgs. 12-13

● RESIDENTIAL SURROUNDINGS
● COMMERCIAL LOCATION

HOTEL FORT WAYNE

In addition to the superior accommodations at the Fort Wayne, guests enjoy a superb location in a residential community, yet convenient to the business districts. Hotel Fort Wayne provides economy without sacrifice of comfort or location.

300 ROOMS
EACH WITH BATH
FROM \$2

TEMPLE AT CASS
OPPOSITE MASONIC TEMPLE

DETROIT

When inquiring specify EP973 . . . see information request blank, pgs. 12-13

New Literature (Con.)

Neoprene Gloves

This new folder gives complete information on the maker's line of Neoprene gloves for industrial use. Included also are laboratory test reports. Folder will be sent upon request.

SURETY RUBBER CO., Dept. EP, Carrollton, Ohio.

When inquiring specify EP974 . . . see information request blank, pgs. 12-13

Variable Speed Transmissions

The 7th edition, Book No. 1574, 40 pages, describes the two new sizes of P.V.I. Gear variable speed transmission units. (New sizes are ½ h.p. for speed ratios of 2 to 1 or 3 to 1; and 1½ h.p. for ratios of 2, 3, or 4 to 1). Other new items included in the book are vernier control for extra-fine speed variations; and a convenient table that makes it easy to select the proper size unit for service.

LINK-BELT CO., Dept. EP, 307 N. Michigan Ave., Chicago, Ill.

When inquiring specify EP975 . . . see information request blank, pgs. 12-13

"Metallo Gaskets"

This effective catalog gives most complete descriptive material on the maker's line of gaskets. Specification tables, applications, illustrations with photographs and line drawings all combine to make this booklet effective in its presentation of these products for every flange requirement. Eleven gasket constructions are described in detail. Available upon request.

METALLO GASKET CO., Dept. EP, New Brunswick, N. J.

When inquiring specify EP976 . . . see information request blank, pgs. 12-13

General Service Motorpump

A well-designed broadside "takes apart" 'this new motor-pump and shows the operating features as to their location within the unit and "blows them" up into larger views for detailed inspection. Descriptive material gives specifications and general information such as sizes (5 to 1000 gallons per minute and heads up to 500 feet), and construction details (no baseplate or foundation required, unit construction with impeller mounted directly on shaft of electric motor drive).

INGERSOLL-RAND COMPANY, Dept. EP, Phillipsburg, N. J.

When inquiring specify EP977 . . . see information request blank, pgs. 12-13

Autocall Paging Service

An attractive portfolio type of catalog, with numerous enclosures, adequately describes this paging service. Various types of signaling devices are explained and supplemented with specifications and drawings to show operating details.

THE AUTOCALL COMPANY, Dept. EP, Shelby, Ohio.

When inquiring specify EP978 . . . see information request blank, pgs. 12-13

Motor Lubrication

This attractive four-page bulletin indicates very clearly the "Lubriflush" development in bearing lubrication. Cut-away drawings show just how the lubricant penetrates the bearings chamber and purges them of sludgy grease.

U. S. ELECTRICAL MOTORS, INC., Dept. EP, 200 East Slauson Ave., Los Angeles, Calif.

When inquiring specify EP979 . . . see information request blank, pgs. 12-13

Quiet, Doorless Phone Booths

How an acoustically lined telephone booth, even though doorless, controls and dampens out interfering extraneous noise is explained in an attractive, two-color folder. The booklet shows models and specifications for industrial, office and store use. The major theme is "An Island of Quiet in a Sea of Noise."

BURGESS BATTERY CO., Acoustic Div., Dept. EP, 500 West Huron St., Chicago, Ill.

When inquiring specify EP980 . . . see information request blank, pgs. 12-13

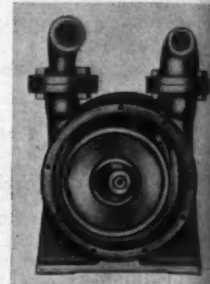
Neoprene Tubing in Pump

Uses Vacuum, Then Pressure Principle

Uses—Designed to handle chemicals, foodstuffs, and corrosive and abrasive liquids, employs new principle of operation.

Features—No stuffing box is required because liquid being pumped is kept within tube during passage through pump. No valves are required on suction side to help maintain vacuum as it is a positive, self-priming unit—an instant vacuum being created by expansion of empty tube.

Operation—Vacuum first sucks liquid into flexible tubing, then



pressure forces it out on discharge side. Tubing in pump, either rubber or neoprene as dictated by liquid being handled, is confined within a casing which prevents tubing from expanding beyond its normal diameter and length, even under high pressures. Pump action

creates vacuum and draws liquid into tubing. Then, liquid is squeezed out of tubing by pressure applied progressively from intake to discharge end. Pressure on tubing is accomplished by eccentric rotor revolving with a circular compressor ring.

Ring is so adjusted that it completely closes tubing which is forced against it by rotor's progressive action. Heavy elastic wall construction of tubing enables it to spring back to original form immediately after rotor releases it, thereby creating a high vacuum on suction side while high pressure is being built up on discharge side.

HUBER PUMP CO., Dept. EP, 90 West St., New York, N.Y.

When inquiring specify EP981 . . . see information request blank, pgs. 12-13

GAS ENGINE

Operates Long Periods Without Attention

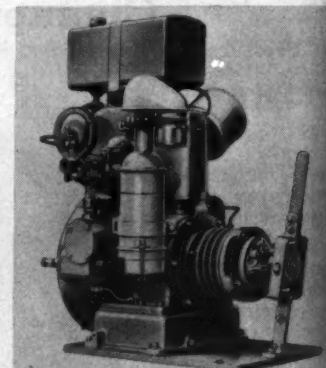
Uses—Well suited for pumping jobs, etc., where horsepower requirements are low.

Features—With no water to freeze or boil away, and with an unusually large lubricating oil sump, engine can run long periods without attention. Unit is air cooled, and fan is cast integrally with flywheel and heat radiating fins cast on cylinder blocks. Has oil-bath type air cleaner.

Description—Single cylinder, 5.5 horsepower. Offered as a complete unit with "Caterpillar" clutch. Full load speed range, R.P.M., is 800 to 1800. L-head valve arrangement. Starting method is manual. Uses gas or gasoline for fuel. Lubrication is pump and splash. Crankshaft is drop forged, heat treated and counterweighted with adjustable tapered roller main bearings. Clutch is dry, over-center type. Has built-in governor.

CATERPILLAR TRACTOR CO., Dept. EP, Peoria, Ill.

When inquiring specify EP982 . . . see information request blank, pgs. 12-13



Hydraulic Sewer Cleaner

Knives, Brushes, Water Clean Sewers

Uses—To remove chemical waste, sand and gravel, roots, layers of incrustation, and similar obstructions from sewers and water mains.

Features—To operate with maximum efficiency, cutting head must be maintained in center of sewer bore. Novel carriage automatically adjusts cutting head to correct for variations in sewer structure, immovable obstructions, etc. This frame consists of four guide bars, each attached to main shaft of machine by two pairs of pivoted arms.



Arms are arranged to bear against helical spring mounted concentrically with shaft, thus allowing guide bars to be forced inward and providing necessary pressure to return them to original position when obstruction is passed. Guide bars are curved at both ends so obstructions may be passed while withdrawing as well as progressing the machine.

Description—Machine uses a hydraulic cleaning and scouring effect combined with action of rotary knives and brushes. Cutting head is mounted on hydraulically balanced simple bearing, and carries rugged knives and pivoted rotating brushes, the latter being forced against sewer wall by centrifugal force. This arrangement assures all material being removed from line since objects lying too close to sewer wall for knives to remove are scoured off by brushes. Water passing through cutting head performs dual function of rotating head and flushing loosened material before the machine.

JOSEPH G. POLLARD CO., INC., Dept. EP, 153 Ashland Place, Brooklyn, N. Y.

When inquiring specify EP983 ... see information request blank, pgs. 12-13

Fume Respirator

Type B—Protection Against Metal Fumes

Uses—For protection against fumes of metals such as lead, mercury (except mercury vapor), manganese, magnesium, antimony, aluminum, arsenic, copper, chromium, iron, cadmium and zinc resulting from sublimation or the condensation of their vapor, or from chemical reactions between their vapors and gases.

Features—Maker states that this is first and only Bureau of Mines Approved Type B Mechanical - Filter Respirator.

Of special importance is the protection against inhalation of lead fumes generated by heating and volatilizing lead, such as fumes generated in lead burning and soldering, smelting, type founding, and fusing lead glaze and enamel.

Description—Rubber face mask fits snugly under chin and air-tight contact is obtained with but slight tension on the adjustable double elastic headband. Twin inhalation valves in mask interior aid exhalation of used air through exhaust valve. Filters are easily cleaned. All parts economically replaceable.

WILLSON PRODUCTS, INC., Dept. EP, 417 Thorn St., Reading, Pa.

When inquiring specify EP984 ... see information request blank, pgs. 12-13



New Literature (Con.)

Nickel Resistance to Caustic Alkalies

Bulletin T-6 has for its subject the resistance of nickel and its alloys to corrosion by caustic alkalies. It contains 16 pages of technical data, tables and illustrations. Detailed reports are given on the performance of nickel, Monel, and other alloys as revealed by laboratory tests and actual service in plants handling these alkalies, with special reference to the transportation, storage, and use of rayon quality caustic soda. Booklet is available upon request.

INTERNATIONAL NICKEL CO., Dept. EP, 67 Wall Street, New York, N. Y.

When inquiring specify EP985 ... see information request blank, pgs. 12-13

Wire Rope Handbook

One hundred and thirty-two pages, vest-pocket size, is this new catalog—wire rope manual. It is packed with helpful information on all phases of wire rope. Such subjects are covered as how to splice wire rope, splicing thimble into rope, socketing and seizing wire rope; and various tables show reserve strength of wire rope, rope diameter tolerances, incline planes, shaft hoist ropes, formula for calculating capacity of reels or drums, table of net discounts, etc.

HAZARD WIRE ROPE DIV., Dept. EP, Wilkes Barre, Pa.

When inquiring specify EP986 ... see information request blank, pgs. 12-13

Hydraulic "Materialift"

Catalog 600, a 12-page, three-color piece, describes and illustrates the company's line of hydraulic lifts. Such products as these are covered completely with pictures, specifications, line drawings, etc., material lifts, ramp eliminators, loading platforms, short lift elevators, machine feed tables, sidewalk elevators, package presses, etc. Some of the cut-away drawings are particularly well adapted to displaying the products' features.

JOYCE-CHIDLAND CO., Dept. EP, Dayton, Ohio.

When inquiring specify EP987 ... see information request blank, pgs. 12-13

101 Welding Ideas

Sixteen pages in this 8½x11 in. booklet tell the story of 101 welding ideas. Each idea shows the problem with a photograph and a descriptive paragraph, and many of these are further supplemented with line drawings for details. Generally, the booklet describes a wide variety of repair, fabrication and structural applications of arc welding. Case studies are taken from oil field, meat packing plants, rubber, paper and pulp, rock products, steel, power plants, etc.

THE LINCOLN ELECTRIC CO., Dept. EP, 12818 Coit Road, Cleveland, Ohio.

When inquiring specify EP988 ... see information request blank, pgs. 12-13

Continuous Ridge Ventilator

This bulletin gives construction details and specifications of this mononvent ridge ventilator, and includes partial list of users. Included also are product's new improvements in the several types of damper operators, both manual and motor operated. Mounting and flashing details for ventilators for all types of building construction are shown.

BURT MFG. CO., Dept. EP, Akron, Ohio.

When inquiring specify EP989 ... see information request blank, pgs. 12-13

Acid Resistant Resurfacer

This four-page folder describes "Rockflux", the company's acid resistant floor resurfacer. Lists users of the product, before-and-after illustrations, and instructions for applying the product.

THE FLEXROCK CO., Dept. EP, 2311 Manning St., Philadelphia, Pa.

When inquiring specify EP990 ... see information request blank, pgs. 12-13

HERE'S HOW TO TRADE PENNIES FOR DOLLARS:



AT A DOLLAR A TON, steam is one of the cheapest materials available to industry today. Yet in numerous instances it is being traded for material selling for anywhere up to \$200.00 or more a ton. Surprisingly enough, there are still quite a few places where the opportunity is being overlooked and this winter will again see dry, heated indoor air rob many products of one of their most valuable components: **MOISTURE CONTENT**. Don't take that loss—install the low priced Armstrong Humidifiers. For complete details write—

TYPE K-2A. List price \$100.00, complete with Fritz Humidistat, solenoid control valve, fan, strainer, and condensate drainage trap. Ask for Bulletin.

ARMSTRONG MACHINE WORKS

880 Maple St., Three Rivers, Mich.

ARMSTRONG STEAM TYPE HUMIDIFIERS

When inquiring specify EP991 ... see information request blank, pgs. 12-13

SCOOP—TRANSPORT—DUMP



Three Independent Power Operations With Brand-New Elwell-Parker Truck

Again—Elwell-Parker brings out a new, dependable Truck that short-cuts your present costly methods of handling loose materials: the Elwell-Parker Power Scoop Truck, for electric or gas-electric operation.

The Scoop is driven by independent motor and loads itself by crowding and rotating more than 100°. It handles from ½ to 1 yd. per bite—stoker coal, chemicals in bulk, complete fertilizers and fertilizer ingredients, etc.

A second motor propels the Truck and a third elevates and lowers the load. Dynamic brakes and other safety appliances are standard equipment.

Write or **WIRE COLLECT** today for illustrated Bulletin—describe your materials and present methods of handling them. The Elwell-Parker Electric Company, 4239 St. Clair Ave., Cleveland, Ohio.

ELWELL-PARKER Power Industrial TRUCKS

When inquiring specify EP992 ... see information request blank, pgs. 12-13

SAVE MONEY STOP WASTING TIME

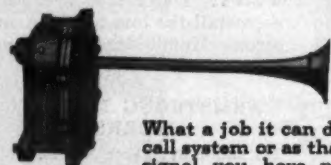
How much time does your company waste in searching for key employees?

How much is production retarded while the superintendent "holds the wire"? How much when a man must drop his tools and hunt the foreman? What about customers who "cool their heels" in the outer-office while the search goes on?

The simple remedy is a modern call system equipped with **FEDERAL STANDARD HORNS** for most locations, **FEDERAL HIGH-POWER HORNS** for noisier places, and

NOW The NEW FEDERAL RESONATING HORN

to beat the hitherto unbeatable noise levels.



No. 55 AC
No. 56 DC

What a job it can do for you on your call system or as that special warning signal you have needed! Pleasant but penetrating. Powerful pulsating air-tone. Supplements the now tried and acclaimed line of Federal Vibratory Horns and Sirens.

Catalog page 109 brings the details. Ask for it!

FEDERAL ELECTRIC CO., Inc.
8715 S. STATE ST. CHICAGO, ILL.

When inquiring specify EP993 ... see information request blank, pgs. 12-13



Five Stand Where One Stood Before!

Up to 600% greater floor space efficiency, minimized handling and easy, simple stock control are afforded by Barrett Horizontal Barrel Racks.

An assured saving for all who handle or ship barreled or drummed products is promised by the easily installed sectional units for banks, two to six tiers high by one to three rows wide. Barrett Horizontal Racks feature a patented runner clip that allows for quick, easy adjustment and expansion of runners. Ask for a desk sample.

All salient advantages are detailed and illustrated in Bulletin No. 561. Send for it.

SAVE WITH BARRETT RACKS.

BARRETT
BARRETT-CRAVENS CO.

3276 West 30th Street • Chicago, Illinois



When inquiring specify EP994 ... see information request blank, pgs. 12-13

New Literature (Con.)

Liquid Screens

Catalog 107, an 8-page bulletin in two colors, shows this company's line of liquid screens. Construction features, specifications, and pages of application pictures make up the catalog. One section answers the question of "Why Liquid Screens?" Available upon request.

ROBINS CONVEYING BELT CO., Dept. EP, 15 Park Row, New York, N. Y.

When inquiring specify EP995 ... see information request blank, pgs. 12-13

Industrial Safety Equipment

This complete catalog ably describes the company's line of eye, head and lung protective equipment, and also its new line of safety clothing. Contains a wealth of material on safety problems—an authoritative treatise on industrial safety problems. Products so thoroughly described include goggles for protection against impact, glare, liquid splashes, dust particles; welding helmets, face shields and respirators, safety gloves, suits, sleevelets, leggings, hats, aprons, hoods, etc. Available upon request.

AMERICAN OPTICAL CO., Dept. EP, Southbridge, Mass.

When inquiring specify EP996 ... see information request blank, pgs. 12-13

Cold Weather Care of Acetylene Equipment

40-page book tells how to prevent freezing of acetylene generators, hydraulic back-pressure valves, distribution piping and hose, regulators, relief valves and water-cooled blowpipes, together with suggestions for procedures where freezing has occurred. Contains many valuable suggestions, and charts and tables provide a quick reference to anti-freeze requirements for hydraulic back-pressure valves. Available upon request.

LINDE AIR PRODUCTS CO., Dept. EP, 205 East 42nd St., New York, N. Y.

When inquiring specify EP997 ... see information request blank, pgs. 12-13

Cog-Belt and V-Flat Drives

Forty pages and attractive cover make up catalog 180. A wide variety of cog-belt and V-flat drives are described in this booklet. Specification tables are extremely complete for all types of the company's drives. Scores of illustrations and drawings show these products in widespread applications. A section on special drives gives formulae for determining requirements to meet practically any condition.

DAYTON RUBBER MFG. CO., Dept. EP, 2350 West Riverview Ave., Dayton, Ohio.

When inquiring specify EP998 ... see information request blank, pgs. 12-13

Hydraulic Engineering Data

This handsomely done, 64-page catalog, with its spiral binding, covers the full line of Peerless pumps. Included are water-lubricated and oil-lubricated turbines, propeller pumps, mine pumps and the new Hi-Lift pump. Valuable hydraulic engineering data fills 12 pages and 38 installation views provide engineers with suggestions as to power hook-up and installation methods. Available upon request.

PEERLESS PUMP COMPANY, Dept. EP, 301 West Avenue 26, Los Angeles, Calif.

When inquiring specify EP999 ... see information request blank, pgs. 12-13

3/4 Through 5 HP Compressors

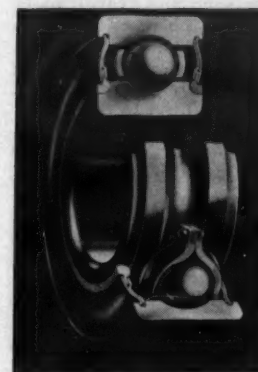
Booklet 7502-J contains both installation and shop views of the company's new line of industrial compressors and vacuum pumps in sizes from 3/4 through 5 H.P. Complete operating and physical characteristics are given for each. The simplified "Finger Valve" construction is described and illustrated.

INGERSOLL-RAND COMPANY, Dept. EP, Phillipsburg, N. J.

When inquiring specify EP1000 ... see information request blank, pgs. 12-13

Sealed Ball Bearings

Double Felt Seal To Single Row Widths



Uses—Seal used in these bearings can be applied to bearings having a standard single row S.A.E. dimension of bore, inner and outer race width. Maker states that this has not been possible heretofore except through use of small balls with loss of bearing capacity.

Features—Development eliminates stuffing box type of seal in favor of air-cleaner principles sealing against dirt by the felt fiber contact on polished surfaces of inner race, and use of natural tendency of deflected felt to resume its original flat shape.

Retains bearing lubricant and excludes dust or dirt entry into bearing, yet sealing action is so light that friction drag has been greatly reduced.

Description—This 6200 RS unit is available for shafts up to approximately one inch diameter. Simplified, space-saving design, even though bearing is single row width, still leaves ample lubricant space.

SKF INDUSTRIES, INC., Dept. EP, Front St. & Erie Ave., Philadelphia, Pa.

When inquiring specify EP1001 ... see information request blank, pgs. 12-13

Cross-Belt Magnet

Intense Magnetic Field Over Conveyor Belt

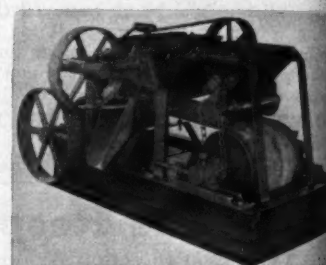
Uses—This type "X" cross-belt magnetic separator unit was originally designed for the purpose of extracting tramp iron in the form of tacks, bits of wire and other foreign particles from batches of dough in a large bakery. Unit has since been used by other companies such as tobacco, tea packers, baking powder, spices and similar products.

Features—Unit applies an intense magnetic field cross-wise over a conveyor belt so that magnetic zone is concentrated in a narrow gap across the belt face. Can be mounted over regular belt conveyors to provide a practical and inexpensive means of obtaining separation of small tramp iron particles.

Description—Consists of a powerful magnet, so designed as to extend at right angles over face of short belt conveyor and several inches over each side to provide effective pull where it will produce the greatest attraction.

STEARNS MAGNETIC MFG. CO., Dept. EP, Milwaukee, Wis.

When inquiring specify EP1002 ... see information request blank, pgs. 12-13



High Pressure Hose

For Handling Propane and Butane Gases

Uses—Two new products—a high pressure hose and a special rod packing—have been developed for handling propane and butane gases. Hose is used for such purposes as conveying gases from storage tanks to tank cars and also from tank trucks to consumer storage tanks. The special rod packing, in addition to its use in the manufacture of these gases, is suitable for use with gasoline, naptha, and all distillates of petroleum and alcohol.

ments exert on ordinary rubber stock, it was necessary to use a synthetic tube. The tube is of sufficient gauge for service demands, and the fabric is designed for high pressure service without wire reinforcement. The cover is made of black, high grade abrasive resisting stock. The hose is furnished with static wire. Hose comes in varying inside diameters, ranging from $\frac{1}{4}$ " to 3", and with recommended working pressures of from 200 to 350 pounds, depending upon the diameter.

The special rod packing is made in both braid over braid or plaited style, and is made of high grade asbestos yarn, lubricated with a special lubricant, and furnished with an outside coating of graphite.

Mfd. by **NEW YORK BELTING & PACKING CO., Dept. EP, 1 Market Street, Passaic, New Jersey.**

When inquiring specify EP1003 ... see information request blank, pgs. 12-13

Condensate Trap

Eliminates Gas Leakage

Uses—For removing small quantities of moisture from gas lines without any of the attendant hazards of gas leakage.

Features—Positively sealed moisture trap. Simple design, and fool-proof.

Operation—In a normal installation, moisture from sewage treatment gas line drains into trap which is placed at the lowest point in the line. Periodically, collected moisture is drained off by manually turning operating handle a half turn, 180 degrees. This operation positively closes gas line connection before opening drain, making gas leakage impossible. After drainage is completed, a half turn of operating handle cuts into gas line again for continued operation.

Description—Trap is furnished with 1" pipe thread, and has a two quart reservoir. All parts of trap are rugged aluminum castings, simple in design. Units are designed to operate at pressures of 1 lb. per sq. in. or less.

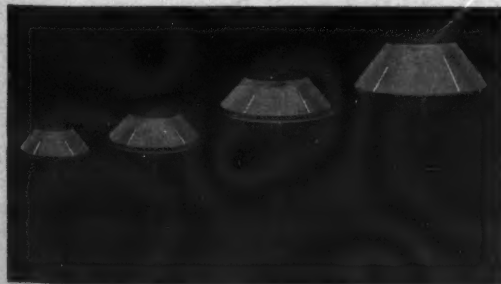
PACIFIC FLUSH TANK CO., Dept. EP, 4241 Ravenswood Ave., Chicago, Ill.

When inquiring specify EP1004 ... see information request blank, pgs. 12-13

Urea Formaldehyde Plastic Reflectors

New Type of Lighting Units

Features—Pressed from urea-formaldehyde condensation product. Available in sizes from 200 to 1500 watts. Reflectors are white both when lighted and when not lighted, so providing whiter light. Hangers made of aluminum.



Adaptable for all uses where efficient light as well as appearance are of importance.

WAKEFIELD BRASS CO., Dept. EP, Vermilion, Ohio.

When inquiring specify EP1005 ... see information request blank, pgs. 12-13

New Literature (Con.)

Axial Flow Pressure Fans

A handsome 24-page, two-color catalog is used to describe over 200 axial flow pressure fans, ranging in size from eight inches to ten feet. The catalog is packed with information on these types of fans. One section describes system resistance — static pressure, another defines fan laws and still another defines fan terms. Specification and capacity tables are well supplemented with photographic displays. Available upon request.

DeBOTHEZAT VENTILATING EQUIPMENT DIV., Dept. EP, American Machine & Metals, Inc., East Moline, Illinois.

When inquiring specify EP1006 ... see information request blank, pgs. 12-13

Engine Drive Engineering Data Book

No. 1645, 48-page, 8 $\frac{1}{2}$ x11 inches—this data book is described by its foreword—"The data contained in this book will be found useful in designing drives for gasoline, oil, Diesel, and steam engines, and in laying out driving connections between crankshafts, camshafts, fanshafts, generators, magnetos, compressors, blowers, governors, etc."

LINK-BELT CO., Dept. EP, 307 N. Michigan Ave., Chicago, Ill.

When inquiring specify EP1007 ... see information request blank, pgs. 12-13

Heat Exchanger

This bulletin describes the company's heat exchanger for heating or cooling fluids of low heat conductivity or high viscosity. Explained in detail is how the finned elements of this unit, Twin G-Fin Section, compensate for high resistance to flow of heat of fluids such as gases or viscous oils. Designs for various types of service are described and more than 60 present applications in the oil and gas industry, chemical process and general industrial plants are listed. Available upon request.

THE GRISCOM-RUSSELL CO., Dept. EP, 285 Madison Ave., New York, N. Y.

When inquiring specify EP1008 ... see information request blank, pgs. 12-13

Car Pullers, Hoists & Winches

Catalog 1339, an eight-page, two color work, supplies complete descriptive data on this manufacturer's car pullers, hoists and sheaves, plus information about hand and motor operated winches. One section covers various types of ropes for use with car pullers; another section offers suggestions for selecting proper car puller. Profuse illustrations amplify descriptive material and specifications.

STEPHENS-ADAMSON MFG. CO., Dept. EP, 11 Ridgway, Aurora, Ill.

When inquiring specify EP1009 ... see information request blank, pgs. 12-13

Short Run Stamping Without Dies

The new "Doall Digest" illustrates and gives details of some fifty typical results — jobs submitted by users of company's equipment. Close-up operating photographs explain the process in detail together with well-handled descriptive material "11 Hours Saved," "21-Minute Die," "44 Minutes — Not 11 Hours," "3 Days Work in Two Hours," etc., are typical results on jobs described.

CONTINENTAL MACHINES, INC., Dept. EP, 1301 Washington Avenue South, Minneapolis, Minn.

When inquiring specify EP1010 ... see information request blank, pgs. 12-13

Pressure Reducing Regulators

A fully illustrated, 8-page bulletin contains complete, concise and useful information on six types of spring and weight-loaded valves for automatic regulation of steam, air, liquid, or gas pressures. These A and B Type pressure reducing regulators are more completely described in Bulletin No. 2, available upon request.

FOSTER ENGINEERING CO., Dept. EP, 100 Monroe St., Newark, N. J.

When inquiring specify EP1011 ... see information request blank, pgs. 12-13

Up Goes Your Production

with "Stanzoil" super-protection of hands against harmful industrial liquids

Why risk the hazard of occupational injuries to improperly protected hands in oils, acids or solvents? Safeguard them with resistant "Stanzoil" Neoprene Gloves and you provide manual comfort; insure against disability and lost time; and help to maintain steady, uniform production.

"Stanzoil" Gloves many times outlast even high-grade rubber gloves in equal service in various liquids and solvents. With 20 years' experience, Pioneer successfully adapts Du Pont Neoprene (man-made rubber) to the demands of modern industrial production — and helps increase your profits.

Write for details of Pioneer's liberal trial offer of "Stanzoil" Gloves. Please mention the solvents or other liquids used in your processes.

"Stanzoil" INDUSTRIAL GLOVES

... made of oil- and chemical-resisting Du Pont Neoprene, comfortable and flexible. Furnished in 4 standard styles, for men and women.



MADE WITH DU PONT NEOPRENE

THE PIONEER RUBBER COMPANY

239 Tiffin Road • Willard, Ohio, U.S.A.
New York • Chicago • Los Angeles

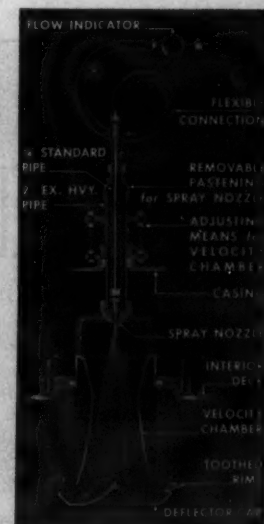
When inquiring specify EP1012 ... see information request blank, pgs. 12-13

GASES and LIQUIDS
brought into
intimate contact

BRASSERT STATIONARY DISINTEGRATOR

A compact unit utilizing the principle of high-velocity impingement, the Brassert Stationary Disintegrator is adapted to the accurate control of intimate contact between liquids and gases or vapors. First perfected for washing gas in the steel industry, the Brassert Disintegrator has many applications in other processes, such as fractionation, distillation, heat exchange and absorption.

The Brassert Stationary Disintegrator will operate in either vertical or horizontal position. To suit any particular application, the volume, pressure and velocity of the liquid and the velocity and



pressure loss of the gas may be adjusted to secure the maximum amount of contact with a minimum amount of operating power. For full particulars, write for Bulletin EP. Address our Chicago or Pittsburgh offices.

H. A. BRASSERT & COMPANY
310 South Michigan Avenue CHICAGO, ILLINOIS
416 Seventh Avenue PITTSBURGH, PENNA.

When inquiring specify EP1013 ... see information request blank, pgs. 12-13

A COMPLETE UNIT

for closing
filled bags



\$294.00
f.o.b.
Chicago

HERE is the lowest priced complete bag closing machine ever developed to include a genuine brand new Union Special Class 14500 sewing head — the same as used in finest units obtainable at any price! This machine is Style 14500-R-161, Standard equipment includes built-in motor, automatic brake, automatic thread cutter, thumb controlled clutch, built-in thread stand, suspension cable, counterweight, and tandem pulleys on bracket for overhead mounting. With this machine, one man can take care of all production requirements for a small plant . . . handle miscellaneous jobs in big plants . . . or do utility work in any plant. Write for complete information. UNION SPECIAL MACHINE CO., 442 N. Franklin St., Chicago, Ill.

**UNION
SPECIAL**

When inquiring specify EP1014 . . . see information request blank, pgs. 12-13

SO MUCH
COMFORT
SO LITTLE
COST

HOTEL HENRY

The Henry gives you accommodations and facilities to meet your hotel requirements completely — yet at a price no greater than for ORDINARY accommodations elsewhere. . . Perfectly located. Surrounded by department stores — banks — office buildings.

VISIT THE **SILVER GRILL**
NEW, BEAUTIFUL RESTAURANT

Be sure to see the novel
DOG HOUSE
IN THE
FORTUNE BAR

FIFTH AVENUE & SMITHFIELD

PITTSBURGH

When inquiring specify EP1015 . . . see information request blank, pgs. 12-13

GATE VALVE

Uses Either U-Bolt or Stock Bolts



Uses — Applications in general industrial, petroleum, chemical process, and other fields.

Features—Using either a U-Bolt or standard stock bolts, this "Duo-Bolt" gate valve offers longer life, less trouble in servicing, lower replacement and maintenance costs, and lower parts inventory. Unit has an extra large drain duct to allow fluids to flow rapidly back into body when piping operations are discontinued. Has a self-seating type, horseshoe shaped slip-on wedge of standard taper. Wedge comes in malleable iron on iron valves with minimum tensile strength of 40,000 PSI, and in high grade steam bronze, ASTM B-61, on bronze mounted valve.

OHIO INJECTOR CO., Dept. EP, Wadsworth, Ohio.

When inquiring specify EP1016 . . . see information request blank, pgs. 12-13

Anti-Rust Treatment

For Use on Rusted or New Ferrous Metal

Uses—Not a paint, nor a rust remover. For application on rusted or new ferrous metal surfaces to stop and prevent rust.

Features—May be brushed or sprayed, or small parts may be dipped. Simple and economical to apply. Shipped ready to use, without stirring or mixing. Does not cut through old paint. Resists vapors and fumes of strong corrosive agents.

Description—Maker states it is a group of specially processed vegetable and animal oils, containing several and varied non-ferrous minerals, chemically reduced to liquid including Chromium - Chromate. Transparent. Trade name is Rustchrome.

CLARONEX PRODUCTS, INC., Dept. EP, 237 India St., Brooklyn, N. Y.

When inquiring specify EP1017 . . . see information request blank, pgs. 12-13

"Rock-Tred" Resurfacer

Non-Sparking — Resists Heat, Fire, Acid

Uses—This pre-mixed floor re-surfacing material bonds permanently to concrete, metal, rigid wood flooring or asphalt mastic floor. Used for new floors or resurfacing old ones, and repair work.

Features—Dustless, noiseless and non-sparking. Provides wearing surface throughout entire thickness. Can be placed indoors or out from 1/2 inch thickness to a feather edge. Will sustain any load that underfloor will stand. No chipping. Material is self-repairing as use automatically smooths out surface abrasions. Top surface attains concrete hardness, but gum-like structure provides lasting resilience. Cures in from 8 to 12 hours and gets harder with age and use. Pre-mixed at factory to eliminate hand mixing and failures through use of silty sand, old cement or improper proportions in mixing. Easily applied with simple directions.

Performance — Material applied around hot caramel kettles in large candy factory. Previously, hot caramel dropping on the floor prevented any flooring material lasting more than six weeks. Present material has now been on four months and no sign of wear is apparent. ROCK-TRED CO., Dept. EP, 629-B West Washington Blvd., Chicago, Ill.

When inquiring specify EP1018 . . . see information request blank, pgs. 12-13



For 1940 Sales
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Industries . . .

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. . . Latest C. C. A. shows 21,725. Constantly increasing requests bring this well over 22,000 today. Largest circulation in this field.

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NOVEMBER-DECEMBER, 1939

25,200 Copies of This Issue

... covering all manufacturing plants in Rubber, Chemicals, Paint, Glass, Explosives, Fertilizers, Rayon, Brick and Tile, Plastics, Soap, Paper, Glue, Brewing, Distilling, Sugar, Coke, City Water Treatment, Oil Refining, Leather Tanning, Cement, China and allied lines.

Alloys in Process Equipment



The visitor to the Seventeenth Exposition of Chemical Industries needs to be only a casual observer to be impressed by the importance of alloys in the fabrication of process equipment.

There is, together with the development of entirely new alloys, an increasing fund of information broadening the field of application of the well known alloys. Physical metal-

lurgists are discovering methods of heat treatment imparting desirable characteristics to both new and well known alloys.

The stainless and stainless clad steels have brought important changes in the fabrication of process equipment. In the form of castings, stainless has made possible the manufacture of non-corrosive valves and fittings.

Several alloys, best known by their trade names, have fitted into construction for purposes where stainless has lacked some of the desirable characteristics. The enumerated alloys are primarily used in major construction. Many other alloys are utilized in the construction of temperature, pressure and fluid flow measuring, controlling and recording devices.

It is suggested that much interesting information about alloys can be acquired by asking questions among the exhibitors of the many kinds of equipment referred to, and it is believed that the questioner will then have a better appreciation of the importance of alloys in process equipment construction.

H. McCormack

Technical Advisory Editor.

TURBINE PUMP

For High Head Service



Uses — For chemical plant service pumping acids, alcohols, and various chemicals; oil refinery and gasoline plants pumping gasoline, propane, kerosene, hot oils, etc.; food and dairy plants; breweries and distil-

leries; and such applications as boiler feed, condensate return units, air conditioning and refrigeration, hot and cold water circulation, etc. Type "T" is specially recommended for machines requiring a circulation pump such as can and bottle washers, filters, air conditioning units, etc., as its design with end suction, having a separate suction flange, permits easy suction hook-ups, and the discharge, with eight different positions, lends itself to many adaptations.

Features—Pump develops high suction lift and will operate up to 28 feet at sea level. Has only one stuffing box which is under suction pressure only and no high pressures are encountered. Two renewable sideplates simplifies assembly and cuts cost of alloy pumps. Impeller and shaft assembly adjustable axially with outside micrometer screw. No shims, springs, nuts, etc. Pump is inherently self-priming.

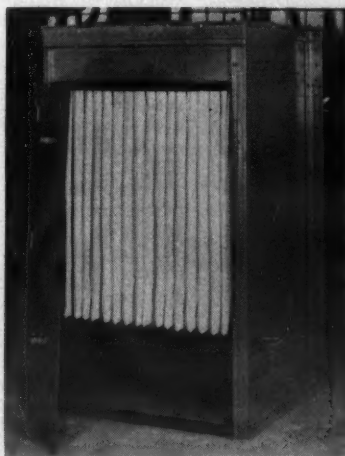
Description—For heads up to 300 lbs., speeds up to 3600 R.P.M., and 1 to 150 G.P.M. Pump is separate from bearing frame—pump end consists only of casing and two sideplates, enclosing the impeller. Same casing used with number of different sideplates and impellers, making it possible to meet changed operating conditions merely by replacing impeller and two sideplates for other heads and capacities. Has oversize ball bearings housed in dust-tight frame. Flanged suction inlet. Twin inlet openings deliver liquid equally to both sides of impeller, giving perfect hydraulic balance, eliminating thrust load on ball bearings. Impeller rotates freely without frictional contact with casing.

DAYTON-DOWD CO., Dept. EP, Quincy, Illinois.

When inquiring specify EP1019 ... see information request blank, pgs. 12-13

Low Priced Dust Filter

Portable—Requires Small Space



Uses — This portable unit can be placed close to individual machines needing exhausting, or used as auxiliary equipment for all types of dust conditions in connection with large dust filters.

Description — Unit is furnished in four sizes, with a net cloth filtering area ranging from 88 sq. ft. to 352 sq. ft., handling an air volume from 350 CFM and under, up to 1500 CFM. Filter is shipped completely assembled

and can be used on floor, mounted against a wall or suspended from overhead. Flat cloth bags thoroughly cleanse dust-laden air; they are shaken by hand (handle shown on right side of filter) to remove any clinging dust. **W. W. SLY MFG. CO., Dept. EP, 4700 Train Ave., Cleveland, Ohio.**

When inquiring specify EP1020 ... see information request blank, pgs. 12-13

Vibratory Feeders

For Solids — Rheostat Flow Control



Uses—To feed bulk solids ... from big lumps to fine powders ... to mixers, grinders, weighing machines, etc.

Features—Nonmoving parts ... no friction between trough and material ... accurate rheostat control of

rate of flow. Range of models from pounds to tons per hour capacities.

Electric Bin Vibrators

Power Adjustable to Desired Vibration



Uses — To keep materials — even the most stubborn, like hydrated lime, cement, wood chips, moist coal, etc. — flowing freely through bins, hoppers, chutes, etc.

Features—Built for 24 hr. per day continuous operation. Rheostat controlled adjustable power.

Write for illustrated catalog free.

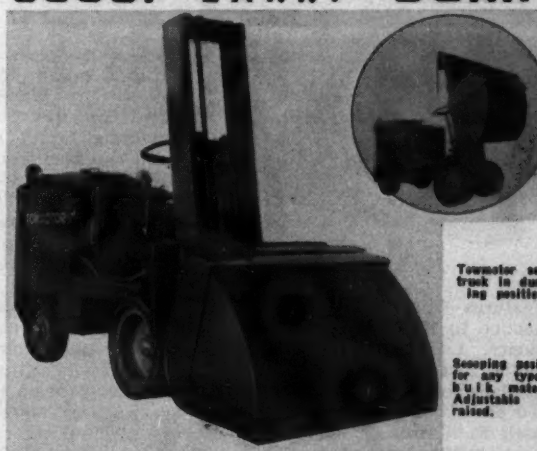
SYNTRON CO., 110 Lexington Ave. Home City, Pa.

• SEE OUR EXHIBIT AT NEW YORK SHOW •

(Advertisement)

When inquiring specify EP1021 ... see information request blank, pgs. 12-13

SCOOP · CARRY · DUMP



Towmotor scoop truck in dumping position.

Scooping position for any type of bulk material. Adjustable gate raised.

TOWMOTORS

You can handle bulk materials such as gravel, fertilizer, bulk chemicals, etc., faster and at lower cost with this TOWMOTOR Scoop Truck. Adjustable gate retains loose material while conveying. Easily maneuvered in small space. Gas powered for economical operation, hydraulic lift for smoothness. Write for literature and specifications.

TOWMOTOR CO. 1255 E. 152nd St., Cleveland, Ohio

SALES OFFICES IN 22 PRINCIPLE CITIES.

When inquiring specify EP1022 ... see information request blank, pgs. 12-13

Throttling Service WON'T INJURE THE SEATS OF

It's the Design
and Construction
THAT DOES IT!!

THIS
VALVE

● Hills-McCanna Saunders' Patent Valves are equally efficient whether used full or partially open. The reason is, their tough resilient diaphragm, which is the opening and closing medium, compensates for any wear or corrosion. A positive leak-proof shut-off is obtained at all times.

Made in 2 models . . . one for air and water . . . one for chemicals. Sizes from 1/2" to 14". Construction of any alloy or cast iron, lined with glass, rubber or lead.

Write For Catalog.

HILLS-McCANN CO.
2370 Nelson St., Chicago

HILLS-McCANN
VALVES

When inquiring specify EP1023 . . . see information request blank, pgs. 12-13

20 G. P. M. Rotary Pump Direct Connected to High Speed 1800 R.P.M. Motor



Uses—For a general purpose pump for almost any liquid handling service, providing liquid is clean and free from abrasives. Included are acids, alkalis, oils, gasoline, naphtha or ether, fruit juices, liquid foods, etc.

Features—High speed operation designed for direct connection to 1800 r.p.m. motor — 20 g.p.m. maximum capacity. Low first cost — no reducing gears required and motor cost reduced by high speed operation. Positive displacement — no priming necessary — pressures up to 100 pounds. Automatic take-up for wear—pump renews itself as it runs—low maintenance cost. Compact and light weight, quiet performance.

Description—Type DC is built in three standard constructions: All iron, bronze fitted, and all bronze. Pump can be furnished with standard or Chevron type packing. It is fitted for grease gun lubrication. Can be furnished with any of 3 standard bases accommodating motors ranging in size from 1/4 to 3 h.p. Unit can be furnished as pump only for mounting on machines. Belted units (consisting of pump, base, pulley and belt shifter) are also available.

Test Run—Laboratory test of 2500 hours continuous running, handling oleum spirits, at 1800 r.p.m., failed to reveal any measurable wear.

BLACKMER PUMP CO., Dept. EP, 1991 Century Ave., Grand Rapids, Michigan.

When inquiring specify EP1024 . . . see information request blank, pgs. 12-13

CARLOADER

Faster Handling Inside Freight Cars

Uses—Designed for faster freight car loading and high-way truck loading. For speedy maneuvering in railway freight cars.

Features—Has 2-wheel steer at rear for making short pivot turns on either driving wheel. Controllable speed from 1/2 to 8 m.p.h., both forward and reverse, with 2 speeds forward and 2 reverse. Maximum lift speeds are 40 to 60 ft. per min.



Description—Gas powered hydraulic lift with 47" wheel base. Center control type with 2-wheel drive at load carrying end. Has 150 sq. inches of braking service. Frame construction is all welded, box type heavy steel plate. Motor fully mounted on rubber. Motor and transmission assembly is flexible and connected to drive axle by propeller shaft with two universal joints. Oil pump for hydraulic lift is connected to motor by constant drive to avoid clutching. Lifting capacity up to 4,000 lbs. per load.

TOWMOTOR CO., Dept. EP, 1255 East 152nd Street, Cleveland, Ohio.

When inquiring specify EP1025 . . . see information request blank, pgs. 12-13

Resistoflex PVA

Impervious to Oils and Organic Solvents



Uses—Created specifically as a material that would be entirely unaffected by gasoline, oils, and organic solvents. Its toughness and strength enable it to be used for vacuum tubing as well as for high-pressure tubing. Has wide usage in various process industries.

Features — Light weight — specific gravity approx.

1.26. Has wide temperature range from minus 55 deg. F. to plus 270 deg. F. Has a very high tensile strength, is virtually unbreakable under repeated flexing or twisting. Will not check or crack. Impervious to gasoline, oils, and organic solvents. Transparent, soft, elastic.

Tests—Each test for 120-day period. 3/16" I.D. tube immersed in each solvent. Condition of Resistoflex PVA after immersion was unaltered for such solvents as gasoline, benzene, turpentine, toluene, xylene, freon, ethanol, isopropanol, methanol, ether, butane, dioxan, acetone, hexon, acetylene, chloroform, carbon tetrachloride, carbon disulfide, methylene dichloride, etc. Swelling tests of the material immersed in hot oil for 144 hours showed

negligible shrinkage and practically unaltered condition for both mineral lubricating oil at 250 deg. F. and Kerosene at 165 deg. F. (flash point at 187 deg. F.) Not completely resistant to water and therefore not recommended for conveyance of water or steam.

Description—Material is a synthetic resin—basically, polyvinyl alcohol—offered chiefly in the form of tubing. Tubing is available in diameters up to 1 1/2" I.D. Tubing is made up with various types of covering construction depending upon internal and external operating conditions.

RESISTOFLEX CORP., Dept. EP, 370 Lexington Ave., New York, N. Y.

When inquiring specify EP1026 . . . see information request blank, pgs. 12-13

Sand Blast Gun

Salvages Defective Sheets

Uses — Now being used by makers of vitreous enamel products, such as stoves, refrigerators, cabinets, sinks, etc., for de-enameling defective sheets or parts which ordinarily are a total loss. Besides de-enameling, maker recommends this type gun for cleaning wood, stone and other materials, the surfaces of which might be damaged by a harsher single nozzle blast.

Description—Illustration of operation shown in cut. New gun has five outlet nozzles or orifices through which sand is discharged with a brush-like action—cleaning without peening or distorting sheets of 19-gauge and lighter.

MICHIANA PRODUCTS CORP., Dept. EP, 80 East Jackson Blvd., Chicago, Ill.

When inquiring specify EP1027 . . . see information request blank, pgs. 12-13

Lubricating System Flushes Bearings

Purges Motor Bearings of Old Lubricant



Uses — To purge old worn-out lubricant from bearings of electrical motors while injecting new lubricant at same time.

Features — This electrical motor manufacturer provides a duct leading from outside of motor, through which new lubricant is injected to inner side of bearing with a pressure gun. A drain is placed on opposite side of bearing underneath.

As new lubricant is injected old lubricant is forced out of bearing. Before new lubricant reaches drain exit it must first flush entire bearing and chamber.

Results—Manufacturer claims this system of lubrication eliminated many evil results of sludgy, worn-out lubricants being left in bearings, making for better operation and longer life of motor bearings. Details of this system available in new bulletin, free on request.

U. S. ELECTRICAL MOTORS, INC., Dept. EP, 200 E. Slauson Ave., Los Angeles, Calif.

When inquiring specify EP1028 . . . see information request blank, pgs. 12-13

Handiletric . . . Hauls Electrically

Handles Up to 4,000 lbs. "At Touch of Switch"

Uses—Applicable where materials are handled on skid platforms, in all kinds of plants.

Features—New design applies electric power only to moving of loads and effects great economy through new type Hydromatic unit for lifting and lowering. Operation is simple . . . truck is run under platform, load easily lifted by Hydromatic unit and a touch of the trigger switch, load moves off automatically. Any workman, without previous experience, can operate the Handiletric safely and without fatigue. Load lowers gently under hydraulic control.

Description—Weighs 800 lbs. without batteries. Has one forward speed and one back speed at 260 feet per min.



Latest type automotive gear transmission. Specially designed motor. Rubber tired wheels. Ball bearings throughout. All controls automatic. Operator cannot "plug" motor.

Performance — Manufacturer states operator with this unit can move four times the tonnage he can handle with hand pulled lift trucks. Battery designed to give 8 hours continuous service.

Cost—Prices on application . . . said to be radically less than electrically powered trucks of equal capacity, of other types. Several types of batteries available at different prices.

W. R. & W. C. STUEBING, 2425 Spring Grove Ave., Cincinnati, O.

When inquiring specify EP1029 . . . see information request blank, pgs. 12-13

DRY FEEDER



Uses—Designed primarily for laboratory use and for handling small feeds of material to industrial processing machines such as mixers, pulverizers, screens, etc., and for handling chemical re-agents, this new model will answer many requirements not justifying larger capacity, more expensive feeders.

Features—Hopper is kept free flowing by small electro-

magnet vibrator attached to one of its sides, thus preventing arching over and clogging of material.

Description—One cubic foot hopper supplies material to a vibratory feeder conveyor trough. Rate of flow of material through feeder is regulated by amplitude of trough's electro-magnet vibrator which is controlled by means of rheostat mounted in a separate wall panel controller supplied with each machine.

SYNTRON CO., Dept. EP, 110 Lexington Ave., Homer City, Pa.

When inquiring specify EP1030 . . . see information request blank, pgs. 12-13

Unit Heater Feature "Stay Tube" to Prolong Life of Heater

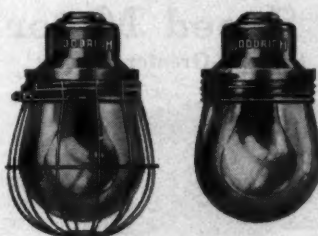
Features — Manufacturer claims this new feature will lengthen heater life as well as maintain proper relationship between supply and return headers, thus leaving loops free to take care of expansion and contraction between individual tubes.

Description — The patented "Stay Tube" is built into the heating element between supply and return headers to allow any entrained moisture, which might otherwise be carried over into heater, to drain directly from supply header to return header without entering other tubes of heating element. This "Stay Tube" is four times as heavy as other tubes in heating element. So, if this entrained moisture is corrosive, as it may be, it will encounter greater resistance in "Stay Tube" and not affect other tubes. Thus longer life is assured.

HERMAN NELSON CORP., Dept. EP, Moline, Ill.

When inquiring specify EP1031 . . . see information request blank, pgs. 12-13

Dust-Proof Light Fixture For Hazardous Dust Conditions



Dust-Proof Fixtures

Uses — For use in flour and feed mills, grain elevators, coal pulverizing plants, and similar locations where dust conditions produce operating hazards.

Performance — This dust-proof fixture is approved by Underwriters Laboratory for use in Class II, Group G, hazardous

location where combustible dust is, or is likely to be, suspended in the air in sufficient quantities to produce explosive mixtures. Also in Class III and Class IV locations where fibers and material producing combustible particles are manufactured, handled or stored.

Features—Fixtures are dust-proof, moisture-proof and weather-proof. Offer protection in locations where combustible dust collects in quantity on fixtures and is likely to cause over-heating.

Description—Has heavy threaded glass globe. Fixture, with one-piece copper hood, may also be fitted with heat-resisting daylight blue, ruby or diffusing globes, as well as clear globe which is standard. Offered in sizes to accommodate lamp sizes from 25 to 150 watts. Fixture has resilient socket to prolong lamp life, and socket is easily removed for quick wiring.

GOODRICH ELECTRIC CO., Dept. EP, 2900 N. Oakley Ave., Chicago, Ill.

When inquiring specify EP1032 . . . see information request blank, pgs. 12-13

SAVE with GROUP WASHING FIXTURES

—save Space, Water, and Installation Expense

As many as 16 men can wash at one time in the clean, running water—yet each Bradley requires no more piping connections than one single wash basin!—One hot water, one cold water and one drain connection.—70% less water is consumed.

Without obligation, experienced washroom consultants can help you—suggest arrangements for new or existing buildings. Bradleys will pay for themselves out of savings—easily and quickly installed. Let us mail you our Washroom Plan Book. BRADLEY WASHFOUNTAIN CO., 2257 W. Michigan Street, Milwaukee, Wisconsin.



When inquiring specify EP1033 . . . see information request blank, pgs. 12-13



If there is Dust in your Plant it should have the attention of experts because uncontrolled Dust is an expense in many ways. DRACCO Filters are designed to control Dust in an entire Plant or from one or more individual machines. Even a small amount of Dust should be controlled to prevent damage to equipment and reduced efficiency of plant and personnel. DRACCO Engineers have over 25 years of practical



experience to draw upon and are exceptionally well qualified to give you sound advice on this important problem. Why not write today?

Write for Bulletin No. 302

DRACCO CORPORATION

Successors to The Dust Removing & Conveying Co.
4090 East 119th Street, Cleveland, Ohio New York Office: 130 West 42 Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

When inquiring specify EP1034 . . . see information request blank, pgs. 12-13

Your Products Deserve This Safer Shipment AT LOWER COST

**Signode
BULKBINDING**

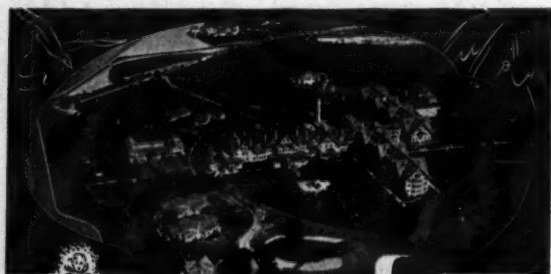
● Savings of several dollars per car are not unusual when a shipper adopts the modern, engineered method of bracing carload shipments known as Signode "Bulkbinding." The system is applicable over a wide range of processed products—oil, paint, chemicals, etc. By eliminating costly, bulky dunnage it cuts the cost of loading time, labor and materials. By holding shipments secure in solid "bulkbound" units with just the right "give" to absorb transit shocks, it reduces damage claims... Find out what your firm can save by asking the local Signode representative to call. Or, write us direct mentioning your products.

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When inquiring specify EP1035 ... see information request blank, pgs. 12-13



**Florida's
MOST FAVORED SPOT**

Combines everything that Florida can offer—in climate, sports and social diversions—golf on its two famous 18 hole courses, tennis, trap and skeet shooting, saddle horses, salt water pool and sea bathing, dancing, fishing and boating... moving picture theatre and smart New York shops... excellent cuisine and service.

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LOS ANGELES

A. S. Kirkeby
Managing Director

When inquiring specify EP1036 ... see information request blank, pgs. 12-13

Evaporative Coolers Prevents Contamination of Liquid Being Cooled

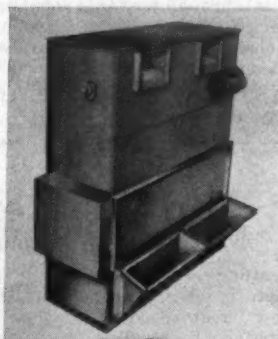
Uses—Expressly designed to cool fluids in a closed system. Diesel engine cooling, cooling dehumidifying liquid and transformer oil, and cooling quenching oil are all functions of this air conditioning unit. **Features**—This method of cooling fluids in a closed system eliminates possibility of contaminating liquid being cooled, and affords cooling without direct contact with the air. For Diesel engine cooling, method prevents scale formations in engine jackets. In cooling transformer oil, makes possible reduction of core loss and increases transformer's efficiency.

Operation—Cooler's operation involves three separate fluids: (1) Liquid within coil, (2) Spray water outside of coil, and (3) air circulated over coil. This type of unit is based on the following facts: Heat flows from liquid within coil to spray water outside of coil due to difference in temperature between the two; heat in turn flows from spray water to air through evaporation of small portion of spray water into the air—this evaporation being possible because spray water temperature is above air wet bulb temperature; spray water is continually recirculated and its temperature, therefore, is practically constant.

Description—Units can be designed for indoor or outdoor operation. Casing is of 12 and 14 gauge heavy metal rigidly braced. Finned coils are used. Flooding type nozzles have extra large orifices to prevent clogging. Units are provided with ¾" connections for water supply—overflow and drain connections are 2". Standard motors used—fan motor has V-belt drive and pump motor is direct connected.

TRANE CO., Dept. EP, La Crosse, Wisconsin.

When inquiring specify EP1037 ... see information request blank, pgs. 12-13



Adjustable Speed Motor New Eddy Current Clutch—Greater Torque

Uses—For application of electric motors where slip, speed control, intermittent service, gradual or rapid acceleration of load, shock absorption, load release, etc., are desired. Applications include process machinery, conveyors, pumps, glass and paper machines, mixers, extractors, etc.

Features—This new motor is a combination of an eddy current clutch and a standard constant speed A.C. squirrel cage motor. There is no mechanical contact between driving and driven members of unit. Speed and torque variations are obtained by controlling magnetic excitation of clutch, thereby obtaining any desired slip. Torsional impulse and vibrations are absorbed. Gradual or quick load acceleration and rapid intermittent starting and disconnecting loads are permitted. Speed variation is from zero to full speed at full torque load. Can be continually operated at low speeds without overheating. Remote control available.

Clutch Principle—Eddy current clutch is based on new type of pole. This feature enables designer to obtain intense flux saturation at pole ends with result that torque developed between driven and driving members is con-



stant and is much greater than anything heretofore known.

Description—Eddy current clutch is available in wide variety of torque characteristic and in sizes from fractional horsepower to several thousand horsepower. Maker states that the clutch is 95 to 97% efficient under conditions of maximum excitation and minimum slip; 150 to 250% of normal full load torque of motor. Manometric, hydrostatic, etc. remote control is possible as relatively small power is required for excitation. Motor and clutch parts are contained within single housing.

LOUIS ALLIS CO., Dept. EP, Milwaukee, Wisconsin.

When inquiring specify EP1038 ... see information request blank, pgs. 12-13

Unfused Double Throw Switches

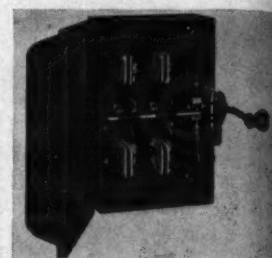
Quick Make and Break

This is a new line of unfused Type A double throw switches announced by this manufacturer.

Features—These switches are made in full Type A construction having quick make and break, cover interlock, and padlocking divisions for three padlocks in the "OFF" and both "ON" positions. Switches are of unit base construction, have the new V-type blade, multi-spring jaws and compression spring construction of quick make and break mechanisms. They include 60, 100 and 200 ampere sizes, both 2 and 3 pole. All sizes are listed with the Underwriters' Laboratories for either 230 volt or 575 volt A.C. as well as 250 volts D.C.

SQUARE D CO., Dept. EP, Detroit, Mich.

When inquiring specify EP1039 ... see information request blank, pgs. 12-13



Pipe Line Sight Glasses Continuous Checks on Operation

Uses—Developed to facilitate observation of the duration of the blow-off from hot process softener sedimentation tanks, many other applications are found for visible-flow fittings in power plants and process industries.

Features—Provides continuous checks on operation of equipment and permits observation of fluid in flow under pressures up to 125 lbs. per square inch. The closed fittings equipped with sight glasses permits discharge of a sludge to the sewer under pressure as well as permitting a smaller line than would be necessary with gravity flow from an open funnel as is the usual custom with hot process softener sedimentation.

Description—Designed in six sizes for 2½, 3, 4, 5, 6, and 8 in. lines for any purpose where visual inspection of fluid flow is desired. Body is of cast iron and window frame of steel. Windows are Pyrex glass. Sight glass fitting is flanged for installation in line and all sizes measure 13¼ in. between finished surfaces. Windows are 4½ inches in diameter for all sizes. Weights range from 4½ to 215 lbs.

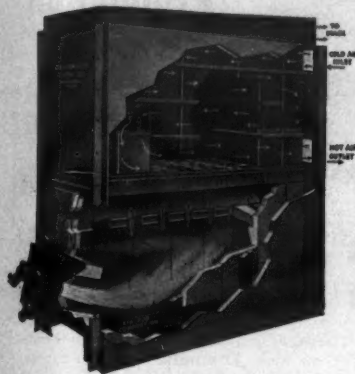
COCHRANE CORP., Dept. EP, 17th & Allegheny Aves., Philadelphia, Pa.

When inquiring specify EP1040 ... see information request blank, pgs. 12-13



Indirect Air Heater

Fast Heat Transfer—Self-Cleaning Tubes



Uses—For dryers and dehydrators (lacquers and paints, chemicals, moisture removal, porcelain and frit, food, fruit, seeds); curing ovens and kilns (tobacco and other products); space heating for all types of buildings; baking ovens (japans, enamels, wrinkle finishes, insulating varnishes, lithographing, etc.). Being

of indirect air type, air which is passed into ovens or dryers is kept clean, uncontaminated, gas free, etc.

Features—Unit offers positive protection against heat exchanger burnouts through use of heavy duty nickel chromium alloy protection plates, mounted directly above combustion chamber, acting as bottom header plate for heat exchanger tubes. Has vertical "self-cleaning" tubes which do not permit soot and dirt to lodge inside, thus greatly reducing maintenance. Uses a low pressure proportioning type burner in contrast to use of high pressure burners on other types of heaters, thus saving in cost of air for combustion purposes, and allowing heater to be operated when factory air line is shut off. Only one burner is used to produce 500,000 BTU capacity, and after once set, will maintain definite fuel-air ratio regardless of whether burner is on high or low fire.

Description—Heater is made in four models—four pass model delivering air to 600 deg. F., two pass at 300 deg. F., and a one-pass model up to 200 deg. F. Special models for 1000 deg. F. are available. Heavy duty protection plate keeps radiant rays of combustion chamber away from steel tubes and protects tubes from any flame impingement. Protection plate enables use of 16 gauge steel tubes in heat exchanger providing extremely fast heat transfer. Unit has fully automatic temperature control, full safety control, and eliminates costly burner adjustments.

DESPATCH OVEN CO., Dept. EP, Minneapolis, Minn.

When inquiring specify EP1041 ... see information request blank, pgs. 12-13

Skin-A-Cat Respirator

Needs No Filter Retaining Plates

Uses—U. S. Bureau of Mines approval for Type "A", Pneumoconiosis or Silicosis producing dusts.

Features—Different filter construction requires no filter retaining plates—filters held in place by adjustable tubular connections. Filters cannot choke or collapse—stay flexed—and provide more free breathing condition. Has two check valves and exhalation valve so moisture cannot collect. No possibility of re-breathing vitiated air. Face cloth provides dermatitis protection and wearing comfort.

Description—Twin filter type has 40 sq. in. of filtration area. Face piece is of rubber and makes air-tight fit on



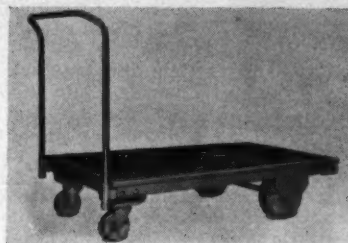
any shaped face. Entire respirator is of unbreakable construction with no metal parts to bend or damage. Filters are sewed together according to standard practice and then turned inside out (skin-a-cat fashion) before attaching to respirator face piece. With seams on inside instead of outside, filters keep at top efficiency.

H. S. COVER, Dept. EP, Chippewa Street, South Bend, Ind.

When inquiring specify EP1042 ... see information request blank, pgs. 12-13

Convertible Floor Truck

Wider Wheels For Floor Protection



Features—Semi-steel wheels are wider than usual to provide greater bearing area and for floor protection. Brackets supporting push bar can be easily removed to permit installation of box, rack or shelf-type superstruc-

ture, should conversion be desired.

Description—Hardwood deck is used with high carbon steel angles to prevent splintering and cracking at edges. Truck is ruggedly reinforced, the front wheels being particularly well-mounted to provide easy turning and to withstand stresses of overloading. Present construction type increases load capacity.

BARRETT-CRAVENS CO., Dept. EP, 3276 West 30th Street, Chicago, Ill.

When inquiring specify EP1043 ... see information request blank, pgs. 12-13

Thermostatic Filler

Finger-tip Control . . . Any Given Quantities

Uses—For filling barrels or drums or accurately measuring any definite quantity into any kind of container holding 10 gal. or more. Handles lubricating oils, gasoline, kerosene, soap, coconut oil, cotton seed oil, castor oil, syrup, edible oils of many kinds, etc.

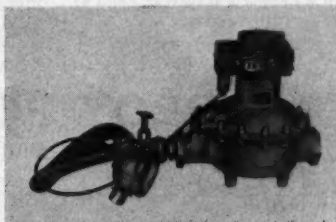
Features—Automatically corrects volume for changes in temperature for any coefficient of expansion. Gives fingertip control adjustable to any given quantities. Prevents losses during swing from hot to cold oil. Simple to set, to start, and stops automatically.

Description—Complete unit includes Meter, Thermostatic Microset, Hydro-Measure-Matic Register, control valve and non-foaming, dripless nozzle and rubber hose complete with couplings. The Thermostatic Microset is simple in design. A copper coil, filled with liquid, is submerged in the product to be metered as it passes through upper section of casing. Lower end of coil is closed, while end in Microset chamber is tipped with a bellows. Microset proper consists of two concentric shafts, lower having a bracket with a worm and arm, or pendulum, attached . . . and upper a worm wheel. End of pendulum has a ball which rides in ball race or orbit, which is supported by a bearing to allow ball race to be tilted or leveled to obtain exact correction.

This filler will deliver predetermined quantities of 10 to 100 gallons at pressures up to 150 lbs. by substituting one small gear train for another on outside of Hydro-Measure-Matic Register.

NATIONAL METER CO., Dept. EP, 4207 First Ave., Brooklyn, New York.

When inquiring specify EP1044 ... see information request blank, pgs. 12-13



at the Chemical Show

Ajax Vibroplane Screens offer performance heretofore never achieved. Large capacity, less blinding, close separation, no abrasion—built in standard sizes ready to use.

AJAX FLEXIBLE COUPLING CO.

201 English St., Westfield, N.Y.

When inquiring specify EP1045 ... see information request blank, pgs. 12-13

Better Support for Tanks, Autoclaves, Vats, Stills, Boilers, Water Softeners, etc.

Simplex Adjustable Tank Supports are Screw Jacks with rounded heads upon which pivot drop-forged steel saddles.

The twelve types of drop-forged steel or cast steel saddles used with them can be welded to cradle bands or direct to metal vessels of any size, shape or purpose.

Made in 28 sizes. Application is simple; as is the raising or lowering of the tank for leveling or for providing gravity flow. Practical, permanently economical. Bacterial pockets eliminated.

Widely used in food, pharmaceutical, cosmetic and chemical plants, dairies, breweries, distilleries, etc.

Bulletin 835 gives complete engineering data.

TEMPLETON, KENLY & CO.

Chicago, U.S.A.
Sole Manufacturers



When inquiring specify EP1046 ... see information request blank, pgs. 12-13

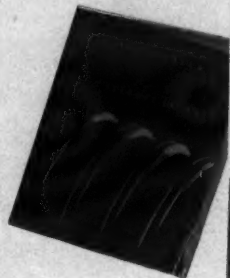
COMPLETE DATA

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If you are interested in getting your machines to operate at higher efficiencies... with modern, low-cost speed flexibility... then you want to know about the new Allis-Chalmers Vari-Pitch Sheaves.

Find out how you can apply modern Vari-Pitch transmission to your machines in chemical and process manufacturing... how you can get variations in speed from 15 to 25% per sheave... while machines are running... without time-wasting change-overs... without holding up production!

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ALLIS-CHALMERS

MILWAUKEE WISCONSIN

When inquiring specify EP1047... see information request blank, pgs. 12-13

SAFE ECONOMICAL EFFICIENT

YALE

**THAT'S THE
YALE CHAIN HOIST!**

Yale Hoists are the best buy of the materials handling field. In no time at all they more than pay for themselves by the economies their efficiency effects.

Not only more efficient—they're safer too.

In the market for a hoist? Remember—YALE BUILDS THEM BETTER!

THERE'S A YALE CHAIN HOIST FOR EVERY PURPOSE. CAPACITIES 300 LBS. TO 40 TONS.

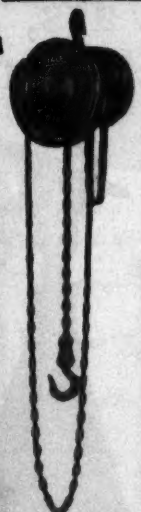
SEND FOR FREE CATALOG

THE YALE & TOWNE MFG. CO., Philadelphia, Pa.

Please send me without obligation your new 1959 catalog showing the entire Yale Hoist Line.

Name.....

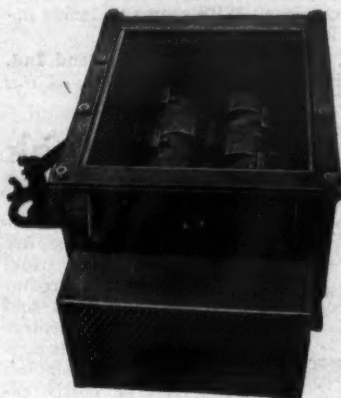
Address.....



When inquiring specify EP1048... see information request blank, pgs. 12-13

CRUSHER-FEEDER

New Type Crushing Action — No Bridging



Features — Improved crushing action and uniform feed control is based on a new design of crushing rolls. Projecting metal stud is placed just ahead of each cutting tooth on rolls. Travelling just ahead of roll teeth, studs agitate the material, putting it into proper position and forcing a sliding angular feed to cutting teeth. Material is so placed

that clean, rapid, uninterrupted cutting is secured with several teeth working on each piece of any large size. Stud action also prevents bridging and too rapid flow of smaller pieces in mixed material. Has ball-bearing, dust-proof, heavy duty construction.

Description — Heavy duty formed shear bar is quickly removed and replaced, with wide range of adjustment in relation to teeth. Both shear bar and crushing rolls are special alloy steels, heat treated and hardened. Crusher roll shafts are mounted in outboard ball bearings completely sealed against dust and dirt. Drive is through bronze bushed pulley, or sheave, shear-pin equipped. If shear pin gives away, sheave or pulley revolves around sleeve on smooth lubricated bronze bearing, preventing damage or overheating until power is shut off. Pulley is mounted directly on one shaft—no reduction required—giving a straight line drive to the other through steel cut-tooth helical gears. Made in two sizes to cover complete range of grinders.

PRATER PULVERIZER CO., Dept. EP, 1802 South 55th Ave., Chicago, Ill.

When inquiring specify EP1049... see information request blank, pgs. 12-13

CARBOY POURER

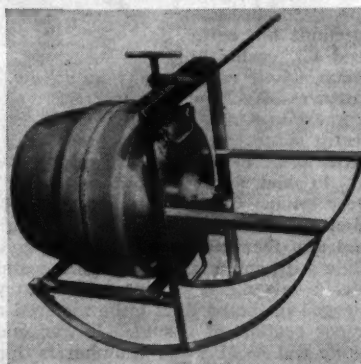
Light Weight—Safe—One Man Handles

Uses — For pouring and draining carboys of the bottle type. Developed for use with the new all-aluminum carboys.

Features — Moderate in cost. Combines both pouring and draining features. Light weight and not cumbersome to manage. May be easily and safely handled by one man. Arc-welded throughout and rigidly constructed.

Description — Unit consists of arc-welded steel frame on a rocker base. Threaded handle clamps collar around shoulders of carboy, holding carboy firmly. Frame is placed over carboy as carboy rests on its own base. When fastened securely, a gentle pull brings carboy into pouring position. A still further pull (frame resting on two supports and handle) places carboy in draining position.

LEWIS-SHEPARD SALES CORP., Dept. A, 245 Walnut Street, Watertown, Mass.



When inquiring specify EP1050... see information request blank, pgs. 12-13

STOP Delays and

Production Losses



With Drives Like These

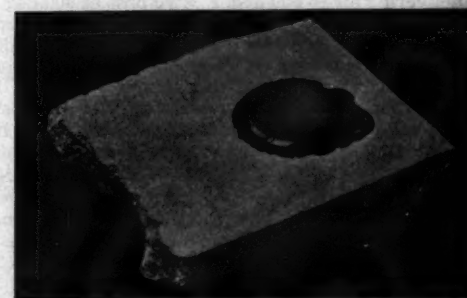


When buying mechanical equipment — note that leading manufacturers use Diamond Chain regularly — insuring long satisfactory service and unfailing production in your plant.

Diamond Chains give you these same advantages on all your motor drives, — long-time economy plus a practically 100% power transmission efficiency. Plants with scores, hundreds and thousands of Diamond Drives are proving this daily. Diamond Chain engineers are ready to aid in selecting the most economical drives for you. Write for Diamond Motor Drive Data Book. DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis, Ind. Offices and Distributors in Principal Cities.

DIAMOND ROLLER CHAINS

When inquiring specify EP1051... see information request blank, pgs. 12-13



HARD, OIL-RESISTANT FLOOR

Used for repairing holes and ruts in concrete floors or for resurfacing an entire area of floor — CONCRETDENSE provides a remarkably hard, smooth surface which resists the penetration of oil, chemicals, acid, water and other liquids. CONCRETDENSE withstands the severest traffic conditions because its structure is much finer, much tighter than ordinary concrete. It is super-solid... with no voids. Here's an economical, practical answer to the problems of the chemical and process industries of producing impervious concrete. Easily applied — indoors or out. Low in cost. Dries fast.

MAKE THIS TEST FREE TRIAL OFFER

FLEXROCK COMPANY

2311 Manning St., Philadelphia, Pa.

Please send complete CONCRETDENSE information and details of FREE TRIAL OFFER... no obligation.

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When inquiring specify EP1052... see information request blank, pgs. 12-13